MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 1, NORTH ATLANTIC STATES.

WILFORD M. WILSON, District Editor.

GENERAL SUMMARY.

The month of August, 1911, presented some marked contrasts, the first decade being very hot and dry, the last decidedly cool and wet, while during the intervening period the weather was generally pleasant and in most respects nearly normal. The first ten days of the month were quite unfavorable in view of the dryness of the soil in most sections at that time. There was a general insufficiency of rain from about the middle of June until the close of the first or second week of August, which resulted in great injury to vegetation, pastures becoming short and streams reaching very low stages. Dry weather continued over much of New York, New Jersey, and New England until the 25th, though some relief was afforded by the showers of the 15th and 18th.

The period of heavy rains that occurred during the last week of August, particularly over the Atlantic coast plain, was the most prominent feature of the month. The total rainfall of this period amounted to more than 8 inches in many localities and over nearly all the coast plain it constituted from 60 to 80 per cent of the total for the month.

The following table summarizes the leading meteorological features for the various sections of the district:

States, or parts of States, within district No. 1.	Temperature.				Precipitation.				Average number of—	
	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Rainy days.	Clear days.
New England States	66.9	−0.3	97	34	4.86	+1.14	9.79	1.90	9	13
New York	68.3	+1.2	99	34	5.27	+1.51	10.02	2.21	10	13
Pennsylvania	71.4	+1.8	102	36	8.06	+3.93	12.99	3.50	13	11
New Jersey	72.1	+0.3	101	39	8.91	+4.29	14.74	5.31	11	10
Maryland, Delaware, and District of Columbia	75.2	+1.4	104	46	9.85	+5.94	15.63	3.89	14	13
West Virginia	72.2	+2.1	102	40	8.42	+5.04	10.85	5.57	13	10
Virginia	75.9	+2.1	102	46	7.73	+3.59	11.48	4.55	13	12

TEMPERATURE.

The average temperature for the district was nearly 72°, which is considerably above the normal and about 4° higher than the average for August, 1910. Though the monthly mean temperature was lower than usual over much of New England and at some of the stations nearest the coast in New York, New Jersey, and Pennsylvania, the interior of Pennsylvania and the more northern States in the district experienced an unusually warm August. Over the greater part of these regions the mean temperature was the highest for August since 1906. The highest mean temperature reported in the district was 79.8°, at Eastville, Va., and the lowest was 62°, at Eastport, Me.

Hot weather prevailed over the district during the first decade or longer, the highest temperatures for the month being recorded on various dates from the 1st to the 11th, but chiefly on the 10th or 11th. The highest temperature for the entire district was 104°, at Green Spring Furnace, Md., and temperatures of 100° or above were recorded also in Pennsylvania, New Jersey, West Virginia, and Virginia, but the hot period of August produced no such disastrous effects as were experienced in the large cities one month earlier. Over most of Maine, New Hampshire, Vermont, and extensive areas in New York the temperature did not reach 90° during the month, while in the southern States of the district the hot weather of the daytime was of short duration and sufficiently relieved by cool nights to prevent the occurrence of any remarkable number of prostrations.

From the 12th to the 24th the weather was changeable, the warmest days being the 14th and 17th, each of which was preceded and followed by cooler weather. The lowest temperatures occurred about the beginning or end of the third decade. These were not as low as usually occur in August and were generally above 40°, except in elevated regions of New England, New York, and Pennsylvania. Over most of Virginia, Maryland, and Delaware the lowest temperatures were above 50°. The lowest temperature recorded in the district was 34°, at Presque Isle, Me., Indian Lake, N. Y., and Morehouseville, N. Y. At the two stations last named the lowest temperature for August is usually a little below the freezing point, and has been as low as 20°.

During the last week of the month the temperature was almost continuously below the normal, owing chiefly to the influence of the prevalence of rainy and cloudy weather and the northerly to easterly winds that attended the remarkable storms of that period.

PRECIPITATION.

Although the rainfall was remarkably heavy the month contained an unusual amount of dry weather. In fact the rainfall was much less than the normal until the 24th after which heavy rains occurred almost daily throughout the district. About half the stations in New York had less than 1.50 inches of rain before the 25th, or less than half the normal. Similar conditions prevailed throughout New England, but in other States the deficiency during this period was not so great. There were showers over extensive areas in various sections on the 3d, 4th, 6th, 11th, 15th, and 18th, but these were generally light and, in the greater part of the district, did not supply an adequate amount of moisture.

Beginning with the 24th, a remarkable series of storms passed over the district, two of these coming from the

lake region, one from the lower Mississippi Valley, and the last from along the South Atlantic coast. Heavy rains resulted daily over the entire coast region and somewhat less frequently over the rest of the district. A large number of stations reported daily amounts of rainfall exceeding 3 inches on various dates during this period. On the 30–31st many stations reported a 24-hour rainfall of from 4 to 6 inches. The greatest daily amount for the period was 7.31 inches, at Tuckerton, N. J., on the 26–27th. Annapolis, Md., reported a rainfall of 7.35 inches on the 3d, which was the greatest daily amount recorded within the district during the month. The heavy rains resulted in swollen streams that damaged or destroyed many bridges and roads and flooded lands and crops in the southern part of the district, particularly in the vicinity of Philadelphia and Baltimore and in southern New Jersey.

The average rainfall for the district was 7.59 inches, which is 3.63 inches more than the normal. The greatest amount reported at any station was 15.63 inches, at Fallston, Md., and the least was 1.90 inches, at Bar Harbor, Me. At Fallston, Md., the rainfall of the last seven days of the month was 10.76 inches. The rainfall for August in Pennsylvania, New Jersey, and Maryland was the greatest in any month for several years. In Pennsylvania it was the greatest in the history of the climatological service, except in May, 1894.

On the other hand, there were extensive areas in the district where the rainfall for the month was less than the normal. A deficiency was reported at 14 stations in New England and 11 in New York.

RIVER CONDITIONS.

The rivers for the month were generally low, but not exceptionally so. There was a marked rise after the 25th, particularly in Pennsylvania and in the southern States of the district. The height of the water in the Hudson River and its tributaries was slightly below the August average, except at Schenectady and Troy, where it was slightly above. Low-water stages for August were broken at Albany and Trenton Falls.

SUNSHINE.

The percentage of sunshine was unusually low, the average for 15 stations being only 57 per cent, although at Atlantic City the percentage was 72. The total sunshine for the month in hours averaged 244, ranging from 305 hours at Atlantic City to 182 hours at Hartford, Conn. There was much less sunshine in August than in either of the two preceding months, June averaging 264 hours and July 303 hours. The number of days with 80 per cent or more of the possible sunshine averaged 10, and the number with 20 per cent or less 6.

TABLE 1.—*Climatological data for August, 1911. District No. 1, North Atlantic States.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
Maine.																			
Bar Harbor	Hancock	20	25	64.8	+ 0.3	85	10	48	21†	28	1.90	− 1.27	0.70	0	6	17	4	10	se.	William Miller.
Cornish	York	778	56	67.0	+ 0.8	94	10	43	21	42	3.13	− 1.32	1.32	0	8	13	6	12	n.	T. H. West.
Eastport	Washington	53	39	62.0	+ 2.3	83	10	50	28	25	2.53	− 0.73	1.08	0	7	9	13	9	s.	U. S. Weather Bureau.
Fairfield	Somerset	90	26	65.6	+ 0.2	87	10	44	31	31	2.38	− 0.62	1.35	0	4	16	10	5	.....	E. F. Parker.
Farmington	Franklin	450	14	65.6	+ 0.9	91	10	42	13	42	3.90	+ 0.22	1.15	0	8	9	10	12	s.	W. G. Mallett.
Gardiner	Kennebec	163	19	66.0	− 2.4	90	15	47	21†	33	2.59	+ 0.75	1.14	0	8	17	7	7	sw.	Samuel D. Soule.
Greenville	Piscataquis	1,000	7	62.8	.....	82	1†	41	31	32	4.06	.....	0.78	0	12	.....	.....	.....	.....	U. S. Weather Bureau.
Houlton	Aroostook	362	9	66.4	.....	89	5	40	25†	36	2.80	.....	1.90	0	4	22	2	7	w.	Bangor & Aroostook R. R.
Lewiston	Androscoggin	185	37	66.7	− 0.4	90	10	50	21	31	2.34	− 0.97	0.89	0	7	9	8	14	nw.	Union Water Power Co.
Madison	Somerset	257	8	64.6	.....	89	1	43	13†	34	7.01	.....	3.10	0	9	20	2	9	nw.	William Jardine.
Millinocket	Penobscot	386	8	65.4	.....	86	6	41	31	34	3.90	.....	1.38	0	9	14	8	9	nw.	H. S. Ferguson.
North Bridgton	Cumberland	450	18	66.9	− 0.3	93	10	45	21	38	2.82	− 0.05	0.72	0	7	8	10	13	se.	G. E. Chadbourne.
Orono	Penobscot	129	42	66.2	+ 0.7	88	1†	40	24	44	2.94	− 0.57	0.80	0	6	5	14	12	w.	Agricultural Exp. Station.
Patten	....do	550	9	63.8[d]	.....	85[d]	7†	37[d]	25†	38	4.55	.....	1.82	0	6	15[d]	8[d]	4[d]	sw.	Bangor & Aroostook R. R.
Portland	Cumberland	99	40	64.6	− 1.6	86	23	51	20	28	2.56	− 1.01	0.68	0	11	7	10	14	s	U. S. Weather Bureau.
Presque Isle	Aroostook	.....	2	64.8	.....	88	4	34	31	40	2.87	.....	1.25	0	4	19	4	8	s.	S. L. Merriman.
Rumford Falls	Oxford	505	18	65.8	+ 0.1	87	10	46	31	31	4.85	+ 1.78	2.09	0	8	18	8	5	nw.	Charles A. Mixer.
Winslow	Kennebec	90	16	67.3	.....	90	10†	45	31	38	2.63	.....	1.50	0	6	9	12	10	s.	Hollingsworth & Whitney Co.
New Hampshire.																			
Alstead Center	Cheshire	1,120	7	65.4	.....	86	10	42	30	28	3.79	.....	1.38	0	12	15	7	9	nw.	Frank Dewing.
Benton	Grafton	.....	2	64.2	.....	85	1	38	29	32	4.42	.....	0.96	0	8	17	7	7	w.	State Sanatorium.
Bethlehem	....do	1,470	19	64.0	− 0.2	85	1†	43	21†	32	6.07	+ 2.15	3.21	0	10	18	5	8	sw.	Benjamin Tucker.
Concord	Merrimack	350	51	66.4	− 0.2	92	10	44	21	36	4.24	+ 0.50	2.05	0	10	9	13	9	se.	U. S. Weather Bureau.
Durham	Stafford	88	16	65.6	− 2.4	93	10	38	20	38	4.26	+ 1.18	0.98	0	7	12	0	19	nw.	Agricultural Exp. Station.
Franklin	Merrimack	440	12	67.0	.....	92	10	41	21	41	3.99	.....	2.25	0	10	13	9	9	sw.	Dr. C. P. Webster.
Grafton	Grafton	863	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. R. Kimball.
Hanover	....do	603	77	66.4	+ 0.3	90	10	41	21	38	3.40	+ 0.01	1.30	0	7	2	15	14	sw.	Dartmouth College.
Keene	Cheshire	506	26	67.0	+ 0.8	93	10	39	21	44	3.90	− 0.28	0.78	0	12	13	11	7	ne.	Samuel Wadsworth.
Nashua	Hillsboro	125	26	68.8	.....	96	10	41	24	40	5.17	.....	2.03	0	9	.....	.....	.....	.....	Jackson Co.
Newton	Rockingham	.....	23	65.6	− 1.4	93	10	43	21	38	4.41	+ 1.26	1.33	0	7	9	17	5	se.	W. C. Gale.
Plymouth	Grafton	500	23	65.2	− 0.5	88	10	40	21	38	2.53	− 1.98	0.73	0	7	16	3	12	w.	Hattie G. Trow.
Vermont.																			
Bloomfield	Essex	.....	4	64.4	.....	89	6†	37	24	38	5.49	.....	1.53	0	10	17	7	7	s.	Lyman Falls Power Co.
Cavendish	Windsor	910	8	66.5[b]	.....	94	10	40	21	42	2.93	.....	0.80	0	11	16[a]	8[a]	6[a]	w.	Marietta A. Kingsbury.
Chelsea	Orange	840	16	63.2	− 0.7	90	1	36	21	42	5.51	+ 2.24	3.40	0	8	10	6	15	n.	W. F. Dewey.
Jacksonville	Windham	1,000	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Martha French.
Manchester	Bennington	980	12	66.9	.....	89	10	44	20†	33	2.77	.....	2.03	0	3	10	14	7	sw.	N. M. Canfield.
St. Johnsbury	Caledonia	711	18	66.5	+ 2.1	91	1	41	21	39	5.19	+ 1.36	1.92	0	9	14	7	10	nw.	Fairbanks Museum.
Woodstock	Windsor	700	19	65.6	+ 0.3	88	10	40	21†	37	2.69	− 0.85	1.34	0	5	13	5	13	.....	John S. Eaton.
Massachusetts.																			
Amherst	Hampshire	222	22	68.4	+ 0.2	94	10	44	21	40	5.92	+ 1.65	1.41	0	10	13	10	8	nw.	Hatch Experiment Station.
Blue Hill	Norfolk	640	27	66.6	− 0.8	90	10	51	20	29	6.70	+ 2.53	2.26	0	11	10	7	14	s.	Blue Hill Observatory.
Boston	Suffolk	124	41	69.0	+ 0.1	92	10	56	31	27	4.17	+ 0.14	1.17	0	9	12	5	14	e.	U. S. Weather Bureau.
Chestnut Hill	....do	124	31	69.0	− 0.6	92	10†	49	21	35	5.01	+ 0.73	1.25	0	11	22	0	9	.....	Met. Water Board.
Clinton	Worcester	370	15	68.0	.....	92	10	52	19†	29	5.31	.....	1.21	0	10	16	1	14	.....	Do.
Concord	Middlesex	139	21	66.9	− 1.4	93	10	44	21	38	4.60	+ 0.48	1.09	0	12	10	9	12	sw.	Fred A. Tower.
Fall River	Bristol	200	45	69.4	− 0.8	85	1†	55	20†	23	3.48	− 0.65	1.60	0	12	7	17	7	ne.	C. V. S. Remington.
Fitchburg	Worcester	550	28	69.0	+ 0.7	95	10	50	21	34	6.48	+ 1.68	1.35	0	12	15	8	8	w.	Dr. A. P. Mason.
Framingham	Middlesex	160	31	69.0	+ 0.2	97	10	46	21	39	4.66	+ 0.59	1.28	0	11	.....	.....	.....	.....	Met. Water Board.
Hyannis	Barnstable	31	20	67.4	− 3.9	84	10	54	19	21	7.12	+ 3.89	2.12	0	8	12	13	6	sw.	C. F. Sleeper.
Lawrence	Essex	51	27	67.6	− 2.0	90	14	51	14†	39	5.56	+ 1.54	1.65	0	10	8	18	5	sw.	Essex Co.
Lowell	Middlesex	100	26	70.8	+ 1.4	94	10	50	21	33	5.75	+ 1.49	1.81	0	8	.....	.....	.....	.....	Props. Locks & Canals.
Middleboro	Plymouth	53	25	67.4	− 0.1	90	10	44	21	40	3.30	− 0.34	1.37	0	10	5	14	12	ne.	A. R. Gurney.
Monson	Hampden	420	27	67.5	− 0.2	90	10	45	21	32	7.62	+ 3.58	2.30	0	11	16	10	5	nw.	Dr. G. E. Fuller.
Nantucket	Nantucket	15	25	67.4	− 0.6	85	1	54	31	25	8.03	+ 4.97	4.56	0	12	11	11	9	sw.	U. S. Weather Bureau.
New Bedford	Bristol	88	99	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	City Engineer.
Norfolk	Norfolk	244	8	67.7	.....	91	1†	41	21	41	5.34	.....	2.43	0	8	8	7	16	w.	Ruby H. Martyn.
Plymouth	Plymouth	.....	26	66.1	.....	84	11	51	20	27	4.14	.....	0.85	0	9	17	8	6	e.	Laura B. Knapp.
Provincetown	Barnstable	40	24	66.8	− 2.4	82	11†	52	4	22	4.17	+ 0.99	1.22	0	8	17	0	14	sw.	Gideon Bowley.
Rockport	Essex	25	9	64.2	.....	80	23	54	20†	24	4.58	.....	1.10	0	11	9	9	13	sw.	C. F. P. Bearse.
Rutland	Worcester	1,160	9	66.8	.....	91	10	48	19	30	6.19	.....	1.75	0	10	15	7	9	sw.	State Sanatorium.
South Egremont	Berkshire	764	9	63.4	.....	86	1†	38	21	35	6.01	.....	2.01	0	11	.....	.....	.....	w.	Roscoe C. Taft.
Turners Falls	Franklin	200	20	68.8	+ 1.2	91	10	49	20†	33	6.64	+ 3.54	2.45	0	8	.....	.....	.....	.....	Turners Falls Co.
Westboro	Worcester	298	37	70.5	+ 0.8	96	10†	48	21†	40	4.42	+ 0.29	1.20	0	9	.....	.....	.....	.....	G. S. Newcomb.
Williamstown	Berkshire	711	30	67.4	+ 2.1	88	10	44	21	35	4.41	+ 0.25	1.09	0	8	10	12	9	se.	Williams College.
Worcester	Worcester	518	19	69.9	+ 1.0	90	10	51	21	24	4.77	+ 1.35	1.01	0	10	14	8	9	sw.	G. W. Swan.
Rhode Island.																			
Block Island	Newport	26	31	68.3	− 0.4	84	10	56	31	17	9.79	+ 6.31	3.62	0	10	13	5	13	sw.	U. S. Weather Bureau.
Bristol	Bristol	53	25	69.2	− 0.1	84	1	55	31	17	3.96	+ 0.28	2.02	0	11	17	6	8	sw.	N. G. Herreshoff.
Kingston	Washington	250	22	67.0	− 1.6	87	1†	50	20†	34	6.24	+ 2.14	2.40	0	10	13	9	9	sw.	Nathaniel Helme.
Narragansett Pier	Newport	22	29	66.8	− 2.1	87	1	52	20†	25	7.43	+ 3.38	2.58	0	11	19	3	9	sw.	U. S. Weather Bureau.
Providence	Providence	182	7	69.4	− 1.6	90	23	54	31	32	4.86	+ 0.83	1.64	0	10	.....	.....	.....	nw.	Do.
Connecticut.																			
Bridgeport	Fairfield	20	18	70.6	.....	94	11	51	20	38	6.01	.....	2.09	0	10	14	6	11	s.	William Jennings.
Canton	Hartford	900	50	68.6	+ 0.8	92	10	47	21	33	5.38	+ 0.35	1.42	0	9	13	5	13	nw.	G. J. Case.
Colchester	New London	370	25	67.3	− 1.8	92	10	43	22	41	7.23	+ 2.87	1.79	0	10	13	7	11	s.	S. P. Willard.
Cream Hill	Litchfield	1,300	15	66.9	+ 0.3	92	10	48	20	28	7.27	+ 2.70	2.10	0	9	11	8	12	e.	C. L. Gold.
Danielson	Windham	300	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. E. Bitgood.
Hartford	Hartford	159	7	70.4	+ 1.5	94	10	49	21	31	5.56	+ 1.00	1.54	0	10	7	11	13	s.	U. S. Weather Bureau.
Hawleyville	Fairfield	600	13	68.6	+ 0.2	93	10	44	21	37	7.78	+ 2.83	2.30	0	10	12	9	10	sw.	C. B. Hawley.
New Haven	New Haven	107	124	70.2	+ 0.1	90	1	53	3	28	5.57	+ 0.58	2.11	0	10	12	10	9	s.	U. S. Weather Bureau.
New London	New London	47	41	70.0	+ 0.2	90	11	53	4	28	6.98	+ 2.41	2.35	0	9	13	9	9	ne.	T. C. Dillon.
North Grosvenor Dale	Windham	400	21	68.0	− 1.2	95	10	43	20	39	3.46	− 0.11	0.96	0	10	14	4	13	sw.	Grosvenor Dale Co.
Norwalk	Fairfield	116	21	70.2	+ 0.2	95	11	47	21	39	5.18	+ 1.47	2.00	0	10	18	5	8	sw.	G. C. Comstock.
Southington	Hartford	140	42	68.3	− 0.8	91	10	44	21	40	7.20	+ 2.65	1.75	0	9	4	20	7	s.	Luman Andrews
Storrs	Tolland	640	23	66.9	− 0.7	90	10	49	20†	33	5.08	+ 1.25	1.45	0	7	13	2	16	s.	Agricultural Exp. Station.
Voluntown	New London	260	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Frank S. Bitgood.
Waterbury	New Haven	400	36	70.0	+ 0.4	96	10	45	21	39	8.11	+ 4.14	2.53	0	10	.....	.....	.....	.....	N. J. Welton.

TABLE 1.—*Climatological data for August, 1911. District No. 1*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New York.																				
Addison	Steuben	1,000	21	70.2	+ 2.2	98	7†	42	20	50	6.26	+ 2.99	3.66	0	15	15	8	8	sw.	Dr. H. R. Ainsworth.
Albany	Albany	97	90	71.0	+ 1.5	95	10	50	21	33	4.53	+ 0.57	1.62	0	9	14	9	8	s.	U. S. Weather Bureau.
Alfred	Allegany	1,976	16	67.2	+ 1.7	90	11	41	20	37	7.00	+ 3.33	1.70	0	16					Prof. F. S. Place.
Amsterdam	Montgomery	277	7	68.4	.....	94	10	44	21	40	2.61	.....	1.20	0	9	19	8	4	w.	Emery Elwood.
Athens	Greene	90	9	70.0	.....	93	10	48	21	35	7.43	.....	2.66	0	9	12	10	9	sw.	E. C. Brooks.
Ballston Lake	Saratoga	400	7	68.8	.....	93	10	42	21	39	2.31	.....	0.63	0	12	16	5	10	s.	George R. Schauber.
Bedford	Westchester	450	20	71.4	+ 1.2	95	10	48	31	40	7.43	+ 2.40	1.85	0	12	16	5	10	.....	Dr. L. Rosenberg.
Binghamton	Broome	875	20	68.2	+ 0.7	92	10	42	21	39	2.32	− 1.03	0.82	0	9	5	7	19	e.	U. S. Weather Bureau.
Bouckville	Madison	1,350	14	66.4	+ 1.2	88	1	44	21†	35	4.17	+ 0.60	2.11	0	11	3	10	18	sw.	L. W. Griswold.
Boyds Corners	Putnam	560	29								9.71	+ 4.75								Thomas Manning.
Carmel	....do	500	19	69.9	+ 0.3	95	11	48	20†	37	9.66	+ 4.37	3.71	0	9	16	2	13	sw.	Do.
Chatham	Columbia	470	10	69.6	+ 2.3	92	10	46	20†	38	7.00	+ 2.75	2.71	0	13	13	8	10	s.	Morton R. Tank.
Cooperstown	Otsego	1,250	57	66.2	+ 0.8	88	1	42	21	32	7.39	+ 3.26	2.80	0	13	18	4	9	n.	Miss Elizabeth C. Keese.
Corinth	Saratoga	542	9								2.79		1.40	0	9					A. M. Hollister.
Cortland	Cortland	1,129	49			92	11				3.69	− 0.11	1.03	0	12	13	10	8	s.	F. G. Baker.
Cutchogue	Suffolk	32	34	70.0	− 0.4	92	10	55	5†	30	10.02	+ 6.35	4.49	0	10	14	12	5	sw.	William A. Fleet.
De Ruyter	Madison	1,300	8	68.0	.....	87	1†	41	20	32	3.56	.....	1.47	0	11	9	10	12	s.	B. D. Crandall.
Glens Falls	Warren	340	20	69.8	+ 2.1	95	10	42	21	41	2.81	− 1.06	1.76	0	10	10	9	12	sw.	Prof. C. L. Williams.
Gloversville	Fulton	850	19	66.8	+ 0.6	92	1	41	21	39	3.55	− 0.50	1.65	0	12	11	13	7	w.	W. L. McLean.
Greenfield Center	Saratoga	314	13	68.2	+ 1.0	93	11	47	12†	41	2.83	− 1.34	1.30	0	7	14	10	7	.....	S. E. Darrow.
Greenwich	Washington	425	14	71.6	+ 3.9	99	10	45	20†	42	2.61	− 1.06	0.66	0	10	22	9	0	ne.	Homer J. Whitcomb.
Griffin Corners	Delaware	2,260	11	66.0	+ 3.1	90	10	35[d]	20	45[d]	5.45	+ 1.43	1.65	0	10	15	6	10	w.	Harold O. Judd.
Haskinville	Steuben		16								5.73	+ 2.43	1.97	0	15					W. G. Collins.
Homer	Cortland		20	66.2	+ 1.2	90	10	42	21	39	3.37	.....	1.42	0	9	16	5	10	nw.	Charles C. Mortimer.
Hoosick Falls	Rensselaer	410	9								4.45		1.52	0	10	18	7	6	w.	Sanford L. Cluett.
Indian Lake	Hamilton	1,705	12	64.0	+ 1.8	91	1†	34	21†	42	2.56	+ 0.91	1.20	0	7	13	9	9	w.	Lester Severie.
Jeffersonville	Sullivan	1,240	8	67.6	.....	95	10	37	20†	47	4.27	.....	1.80	0	7	16	8	7	w.	Charles Wilfert, jr.
Liberty	....do	2,300	29	66.4	+ 1.7	92	11	45	5†	32	6.14	+ 1.85	2.50	0	13	15	2	14	nw.	Dr. H. M. King.
Little Falls	Herkimer	924	13	67.8	+ 1.2	91	1†	46	21†	36	3.02	− 0.71	0.98	0	10	21	8	2	w.	O. J. Demster.
Mohonk Lake	Ulster	1,245	15	69.4	+ 2.4	90	11	47	31	27	5.85	+ 0.79	1.75	0	10	18	4	9	sw.	A. K. Smiley.
Morehouseville	Hamilton	1,697	3	62.9	.....	87	1	34	20	40	4.66	.....	1.75	0	8	21	6	4	w.	Theo. C. Remonda.
Morrisville	Madison	.....	0	66.6[d]	.....	88[d]	2†	40[d]	20	42[d]	3.24	.....	1.70	0	10	.....	.....	.....	nw.	Prof. I. M. Charlton.
Mount Hope	Westchester	200	14	72.5	+ 2.5	93	11	53	31	34	8.59	+ 3.28	2.10	0	11	5	18	8	.....	W. A. Cornelius.
Newark Valley	Tioga	825	24								4.22	− 0.13	1.69	0	11					M. D. Clinton.
New Berlin	Chenango	.....	4								3.69	.....	1.31	0	9	11	4	16	w.	Roger Greene.
Newcomb	Essex	1,600	0	62.6	.....	89	5	34	30†	43	2.48	.....	1.15	0	5					Edward Spain.
New Lisbon	Otsego	1,234	21	63.8	+ 0.5	89	1†	35	21	41	4.38	− 0.25	1.42	0	10	9	7	15	.....	G. A. Yates.
New York City	New York	314	86	71.8	− 0.4	92	11	54	30	24	7.38	+ 2.85	3.53	0	12	6	11	14	s.	U. S. Weather Bureau.
North Creek	Warren	1,002	3	66.0	.....	89	10	41	21	37	3.03	.....	1.85	0	5	17	5	9	sw.	W. G. Kenwell.
Northville	Fulton	742	9								3.86		1.80	0	10				w.	P. C. Pickard.
Norwich	Chenango	1,015	5	70.6[d]	.....	90[d]	1†	43[d]	21	35[d]	3.60	.....	1.40	0	9					P. L. Clark.
Oneonta	Otsego	1,112	17	68.6	+ 0.8	92	10	42	21	40	3.84	+ 1.08	0.98	0	9	18	5	8	.....	H. W. Lee.
Oxford	Chenango	916	46	68.0	+ 2.2	89	10	43	21	35	4.61	+ 0.50	2.00	0	7	9	13	9	sw.	J. P. Davis.
Port Jervis	Orange	470	27	70.2	+ 1.0	95	10	41	21	42	6.69	+ 2.27	3.50	0	13	12	13	6	w.	Frank E. Carruth.
Rome	Oneida	445	15	68.1	+ 1.1	90	2†	42	20	30	4.33	− 0.10	1.78	0	8					John O'Mara.
Salisbury	Herkimer	1,526	14	64.8	− 0.6	87	1†	40	21	38	2.74	− 2.39	0.84	0	9	17	10	4	w.	Joseph Ryan.
Scarsdale	Westchester	200	7	69.2	.....	92	11	50	31	35	7.47	.....	2.40	0	10	13	12	6	ne.	C. H. Wilmarth.
Setauket	Suffolk	40	26	70.4	− 0.1	91	11	55	21†	31	8.30	+ 4.00	4.25	0	9	14	8	9	e.	Selah B. Strong.
Sherburne	Chenango		4								2.99		1.18	0	5					E. B. Collins.
Southampton	Suffolk	36	10	69.2	+ 0.1	87	10†	52	22	25	7.16	+ 3.24	3.04	0	10	16	9	6	sw.	W. L. Jagger.
Southeast Reservoir	Putnam	310	6								9.27	+ 4.08								Thomas Manning.
Spier Falls	Saratoga	400	10	65.2	.....	93	10†	35	20	52	2.84	.....	1.40	0	10	9	11	11	sw.	George E. Fifield.
Trenton Falls	Oneida	751	8								4.25		1.50	0	7					C. W. Young.
Tribeshill	Montgomery	268	8								3.00		1.50	0	7					R. S. Marshall.
Utica	Oneida	537	45								3.68	+ 0.04	1.85	0	10					W. E. Young.
Wading River	Suffolk	112	5								9.80		4.10	0	11				sw.	H. B. Fullerton.
Wappingers Falls	Dutchess	110	21	69.8	− 0.1	91	10	48	24	32	7.08	+ 2.37	2.18	0	11	15	10	6	se.	H. C. Townsend.
Warwick	Orange	538	17								7.71	+ 3.37	3.17	0	9					John W. Sly.
Waverly	Tioga	824	29	69.6	+ 2.1	96	10	37	21†	54	4.02	+ 0.59	1.14	0	10	7	11	13	se.	J. F. Shoemaker.
Wells	Hamilton	1,000	5	65.9	.....	93	5	35	21	45	3.47	.....	1.68	0	11					Vernon E. Dewey.
West Berne	Albany	946	12	67.4	+ 0.4	93	1†	36	21	50	2.77	− 1.09	0.75	0	8	9	11	11	se.	W. J. Haverly.
West Point	Orange	167	62	72.2	0.0	94	11	52	21†	32	7.10	+ 2.26	2.30	0	7	14	5	12	.....	U. S. Military Academy.
Windham	Greene	1,520	11	65.6	+ 1.2	88	10	39	21	43	3.99	+ 0.07	0.86	0	12	7	17	7	.....	A. R. Mott.
Pennsylvania.																				
Altoona	Blair	1,181	23	74.0	+ 4.7	93	9†	50	21	32	4.62	+ 1.09	1.47	0	11					C. W. Billin.
Bethlehem	Northampton	260	10	75.1	+ 2.7	96	12	51	20	32	6.77	+ 2.42	2.03	0	14	13	6	12	se.	Prof. E. C. Roest.
Clearfield	Clearfield	1,107	3	68.6	.....	95	10	43	20†	42	6.60	.....	1.43	0	11	16	6	9	sw.	Raymond C. Ogden.
Drifton	Luzerne	1,633	13	76.2	+ 9.4	90	10	45	21	34	7.87	+ 4.01	2.80	0	19	15	4	12	w.	Eckley B. Coxe, jr.
Emporium	Cameron	1,050	24	68.6	+ .4	90	8	44	21	35	7.45	+ 3.72	1.31	0	13	10	13	8	w.	T. B. Lloyd.
Ephrata	Lancaster	384	11	71.6	− .2	95	10†	45	20	40	8.82	+ 4.19	2.76	0	13	12	4	15	w.	W. L. Frantz.
Everett	Bedford	1,080	13	72.4[h]	+ 2.9	94	9	45	20	34[i]	10.10	+ 5.32	2.30	0	....	7[h]	12[h]	4[h]	se.	B. L. Steckman.
George School	Bucks	184	4	71.8	.....	96	10†	48	20	36	11.84	.....	4.97	0	12	12	9	10	se.	Prof. N. W. Swayne.
Gettysburg	Adams	600	37	73.4	+ 2.0	99	11	49	20†	38	12.99	+ 9.27	3.48	0	15	10	10	11	ne.	Col. E. B. Cope.
Gordon	Schuylkill	804	7	69.7	.....	92	10†	40	20	40	10.33	.....	2.95	0	17	11	7	13	e.	Capt. J. G. Johnson.
Hamburg	Berks	380	15	72.4	+ .2	96	10	48	21	35	12.32	+ 6.92	2.01	0	13				se.	W. L. Kalbach.
Harrisburg	Dauphin	361	23	72.7	+ .6	94	11	54	21	27	9.73	+ 5.48	2.41	0	16	7	7	17	e.	U. S. Weather Bureau.
Huntingdon	Huntingdon	650	23	72.6	+ 2.1	98	10	42	20	42	7.14	+ 3.13	1.70	0	12	9	9	13	w.	Prof. W. J. Swigart.
Hyndman	Bedford	977	4	72.9	.....	101	11	42	20	45	9.74	.....	2.35	0	15	10	12	9	s.	H. C. Mauk.
Lawrenceville	Tioga	1,006	13	70.3[e]	+ 2.7	97	10	38	20†	48[e]				0	....	14[e]	7[e]	7[e]	.....	C. P. Darling.
Lebanon	Lebanon	458	24	71.6	− .2	92	11	49	21	31	7.12	+ 2.43	1.94	0	13	9	9	13	e.	Sowers & Rothermal.
Le Roy	Bradford	1,400	22	68.5	+ .7	92	10	48	20†	32	3.77	− .31	.93	0	15	9	7	15	sw.	G. W. T. Warburton.
Lock Haven	Clinton	560	23	72.0	+ 1.0	98	10	46	20	40	7.59	+ 3.31	2.96	0	14	6	15	10	w.	Prof. J. A. Robb.
Marion	Franklin	640	7	74.8	.....	102	11	46	20	38	8.91	.....	1.88	0	12	15	10	6	.....	Hon. C. B. Hege.
Mauch Chunk	Carbon	634	22	70.8	+ .5	95	11	43	21	39	9.36	+ 4.63	1.86	0	15	10	9	12	w.	F. C. Wintermute.
Mifflintown	Juniata	445	7	72.4	.....	97	10	45	20†	39	8.98	.....	2.64	0	14	8	5	18	w.	Wellington Smith.
Milford	Pike	455	8	68.3	.....	95	10	39	21	42	5.86	.....	2.31	0	12	12	10	9	se.	Mrs. Alla Doughty.
Montrose	Susquehanna	1,658	7	67.6	.....	88	10†	44	20	34	4.08	.....	1.20	0	10	16	3	12	s.	Silas Jagger.
Muncy Valley	Sullivan	519	1	68.6	.....	91	10	43	9	39	7.64	.....	2.31	0	8	12	0	19	.....	F. W. Buck.
New Germantown	Perry	873	7	71.5	.....	94	10	45	21	38	6.48	.....	2.50	0	8	18	2	11	w.	Ed. C. Johnston.
Philadelphia (1)	Philadelphia	117	40	74.5	+ .7	94	11	57	30	25	12.10	+ 7.49	4.93	0	14	10	7	14	se.	U. S. Weather Bureau.
Pocono Lake	Monroe	662	9	67.0	.....	95	14	36	21	47	6.51	.....	2.14	0	13	8	6	17	w.	Pocono Lake Ice Co.
Reading	Berks	280	38	72.4	− .3	92	11	48	20	31	7.58	+ 3.10	1.68[e]	0	16	14	3	14	se.	William B. Schuck.
Scranton	Lackawanna	805	11	70.0	+ .7	93	10	47	21	33	6.84	+ 2.60	2.90	0	18	7	10	14	n.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for August, 1911. District No. 1*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted. *		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Pennsylvania—Contd.																			
Selinsgrove	Snyder	455	23	72.2	+ .7	94	11	46	20	34	8.98	+ 4.46	2.28	0	15	0	22	9	se.	J. M. Boyer, C. E.
State College	Center	1,191	23	69.8	+ 1.1	93	10	49	21	35	8.27	+ 4.30	1.89	0	15	.....	.....	.....	w.	Prof. Wm. Frear.
Towanda	Bradford	754	16	71.2	+ 2.7	95	10	41	21	42	3.50	− .10	.94	0	10	14	3	14	e.	Hiram E. Bull, C. E.
Wellsboro	Tioga	1,327	34	68.0	+ 2.4	94	10	38	20	46	5.57	+ 2.07	1.28	0	10	14	10	7	sw.	O. L. White.
West Chester	Chester	455	57	73.3	+ 1.4	95	11	53	20	31	12.35	+ 8.82	4.37	0	17	10	6	15	se.	J. C. Greene, D. D. S.
Williamsport	Lycoming	530	21	73.8	+ 3.6	93	10†	49	21	38	6.07	+ 2.01	2.18	0	10	17	1	13	nw.	Henry H. Guise.
New Jersey.																			
Asbury Park	Monmouth	22	23	71.6	− 0.3	98	11	53	20	32	11.28	+ 6.14	3.52	0	9	10	11	10	e.	B. H. Obert.
Atlantic City	Atlantic	16	38	73.6	+ 1.0	92	17	56	20	20	7.32	+ 3.02	2.94	0	12	12	11	8	s.	U. S. Weather Bureau.
Bayonne	Hudson	50	21	72.3	− 0.6	95	11	54	21	30	8.60	+ 3.49	4.41	0	12	11	10	10	se.	John H. Eadie.
Belvidere	Warren	289	20	71.8	+ 1.0	94	11	47	20†	34	7.58	+ 2.62	1.80	0	8	15	5	11	.....	Samuel J. Hixson.
Bergen Point	Hudson	37	14	71.2[a]	− 0.5	95	11	52[b]	20	33[b]	8.56	+ 3.50	4.63	0	9	10	10	11	se.	Dr. William H. Mitchell.
Boonton	Morris	413	21	.....	.....	.....	.....	.....	.....	.....	5.88	+ .49	1.06	0	11	.....	.....	.....	.....	Foster Peer.
Bridgeton	Cumberland	30	30	75.9	+ 0.8	100	11	52	21	36	8.55	+ 3.81	2.00	0	11	14	8	9	sw.	Henry A. Jorden.
Burlington	Burlington	12	27	.....	.....	.....	.....	.....	.....	.....	11.15	+ 5.54	2.73	0	15	10	11	10	nw.	D. S. B. McCoy.
Canton	Salem	24	17	.....	.....	.....	.....	.....	.....	.....	8.22	+ 3.53	3.23	0	11	10	10	11	.....	John H. Maskell.
Cape May City	Cape May	17	27	74.7	+ 1.3	91	11	58	20	20	7.27	+ 3.01	1.97	0	12	11	15	5	s.	U. S. Weather Bureau.
Charlotteburg	Passaic	719	19	68.2	+ 0.5	93	10	40	21	43	6.21	+ 1.46	1.68	0	11	10	12	9	se.	George S. Briggs.
Chatham	Morris	234	9	.....	.....	.....	.....	.....	.....	.....	5.47	.....	1.40	0	11	.....	.....	.....	.....	M. A. Butler.
Clayton	Gloucester	126	18	73.6	+ 0.1	96	10	51	21	33	11.87	+ 6.72	2.15	0	12	10	11	10	sw.	William T. Farley.
College Farm	Middlesex	100	16	72.1	0.0	95	11	50	20†	36	12.68	+ 7.40	6.70	0	11	10	12	9	se.	George B. Thrasher.
Culver's Lake	Sussex	848	10	.....	.....	.....	.....	.....	.....	.....	7.84	.....	3.05	0	9	10	11	10	e.	Brice E. Riker.
Dover	Morris	600	27	68.4	− 0.8	93	10	44	21	37	6.85	+ 1.85	1.74	0	12	4	13	14	.....	William C. Harris.
Elizabeth	Union	33	32	73.6	+ 0.1	96	11	51	30	33	7.36	+ 2.82	.....	0	11	9	8	14	s.	William M. Oliver.
Flemington	Hunterdon	187	23	72.5	+ 0.7	97	10	49	20	36	8.16	+ 3.75	3.01	0	10	12	9	10	e.	Hiram E. Deats.
Haddonfield	Camden	75	24	73.0	+ 0.1	95	11	50	20†	34	12.91	+ 8.32	2.96	0	15	9	10	12	se.	Charles F. Richardson.
Hammonton	Atlantic	103	13	.....	.....	.....	.....	.....	.....	.....	11.29	+ 6.61	2.73	0	12	.....	.....	.....	.....	Orville Bassett.
Hightstown	Mercer	119	19	72.1	+ 0.2	98	11	47	20	36	10.82	+ 6.05	3.07	0	10	14	6	11	ne.	Ernst Wenger.
Highwood	Bergen	90	....	69.9	.....	94	11	46	20	37	7.04	.....	2.64	0	11	.....	.....	.....	.....	Charles J. Bates.
Indian Mills	Burlington	76	22	72.5	− 0.6	98	11	47	20†	40	13.87	+ 8.70	3.39	0	12	11	10	10	se.	James Armstrong.
Jersey City	Hudson	15	13	73.6	+ 0.3	96	11	56	20†	30	8.21	+ 3.56	3.64	0	10	7	16	8	s.	Samuel K. Pearson, jr.
Lakewood	Ocean	54	9	71.4	.....	95	11	50	20	32	10.30	.....	2.71	0	11	11	14	6	se.	Ralph Robertson.
Lambertville	Hunterdon	95	25	72.8[a]	+ 0.4	94	10†	48[b]	21	33[b]	9.57	+ 4.81	3.67	0	11	14	5	12	sw.	William R. Bowne.
Layton	Sussex	550	12	69.0	+ 0.6	93	10	39	20†	43	8.06	+ 4.42	4.24	0	9	10	12	9	s.	Warren C. Hursh.
Little Falls	Passaic	175	8	.....	.....	.....	.....	.....	.....	.....	6.90	.....	1.96	0	12	.....	.....	.....	.....	A. Sweetman.
Long Branch	Monmouth	30	4	72.3	.....	95	11	51	20	31	11.53	.....	3.58	0	12	11	10	10	sw.	Benjamin B. Bobbitt.
Mahwah	Bergen	312	9	.....	.....	.....	.....	.....	.....	.....	6.35	.....	.....	0	9	.....	.....	.....	.....	Charles L. Barker.
Moorestown	Burlington	71	49	73.4	+ 0.9	95	11	53	20†	31	10.23	+ 5.49	3.32	0	13	9	10	12	se.	John C. Beans.
Newark	Essex	140	68	72.7	+ 0.1	96	11	53	21	33	10.26	+ 5.02	3.98	0	11	8	13	10	se.	Prof. William Wiener.
New Brunswick	Middlesex	61	58	72.1	− 0.3	97	11	46	20	40	11.64	+ 6.55	5.75	0	11	.....	.....	.....	.....	William T. Woerner.
Newton	Sussex	678	32	71.8[f]	+ 2.0	95[i]	10	.....	.....	35[k]	7.78	+ 3.37	2.63	0	10	8	9	14	w.	F. Vernon Losee.
Northfield	Atlantic	.....	4	.....	.....	.....	.....	.....	.....	.....	8.03	.....	2.92	0	11	.....	.....	.....	.....	William L. Flick.
Paterson	Passaic	80	40	70.7	− 1.3	94	10†	51	21	34	5.63	+ .50	1.85	0	12	7	15	9	s.	Heber A. Probert.
Phillipsburg	Warren	363	14	72.3	+ 0.6	96	10†	48	21	36	5.31	+ .61	1.72	0	10	15	6	10	se.	D. W. Smith.
Plainfield	Union	100	25	71.6	− 0.5	96	11	48	21	38	8.21	+ 3.34	4.07	0	10	8	10	13	ne.	John Neagle.
Pleasantville	Atlantic	26	13	.....	.....	.....	.....	.....	.....	.....	10.00	+ 5.31	3.29	0	11	12	12	7	.....	Lincoln Van Gilder.
Pompton Plains	Morris	195	9	.....	.....	.....	.....	.....	.....	.....	6.72	.....	1.66	0	12	.....	.....	.....	.....	M. S. Taylor.
Rivervale	Bergen	70	20	.....	.....	.....	.....	.....	.....	.....	6.67	+ 2.41	2.10	0	9	12	11	8	nw.	Garrett S. M. Holdrum.
Somerville	Somerset	76	28	72.8	+ 0.9	98	11	49	20	36	8.17	+ 3.46	3.35	0	10	10	7	14	se.	Peter Hardcastle.
South Orange	Essex	200	41	70.8	+ 0.1	93	11	52	21	29	8.42	+ 3.03	3.25	0	9	8	14	9	s.	Dr. William J. Chandler.
Sussex	Sussex	442	21	70.6	+ 1.0	95	10	43	21	40	7.10	+ 2.78	3.16	0	9	11	6	14	sw.	George Dymock.
Tuckerton	Ocean	23	18	73.2	+ 1.0	101	11	47	21	34	14.74	+ 8.96	7.31	0	11	11	13	7	se.	Frank R. Austin.
Woodbine	Cape May	43	20	74.0	+ 1.8	96	11	48[a]	20	35[a]	8.56	+ 4.26	4.19	0	11	11	8	12	.....	Prof. H. A. Dodge.
West Virginia.																			
Bayard	Grant	2,500	10	67.9	+ 2.0	93	11	40	20†	49	10.85	+ 6.65	2.50	0	14	13	10	8	w.	Solomon Clark.
Burlington	Mineral	875	17	72.8	+ 1.4	101	11	46	21	45	5.57	+ 2.03	2.00	0	10	4	23	4	w.	J. W. Vandiver.
Franklin	Pendleton	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. A. Martin.
Lost City	Hardy	.....	5	70.2	.....	91	11	48	20	31	6.64	.....	2.00	0	13	14	13	4	w.	B. D. Hinegardner.
Martinsburg	Berkeley	435	15	75.2	+ 3.9	102	11	51	21	37	10.00	+ 6.54	.....	0	13	15	6	10	se.	G. W. Van Metre, C. E.
Moorefield	Hardy	900	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Fisher.
Romney	Hampshire	824	14	74.4	+ 1.8	101	11	46	20	41	9.12	+ 5.65	2.65	0	15	13	12	6	w.	John C. Linthicum.
Upper Tract	Pendleton	1,230	14	72.5	+ 1.2	97	11	48	19	38	8.36	+ 4.34	2.10	0	14	1	26	4	w.	J. M. Mallow.
Maryland.																			
Annapolis	Anne Arundel	45	33	78.9	+ 2.3	99	11	59	19	27	14.05	+ 9.18	7.35	0	15	17	4	10	se.	U. S. Naval Academy.
Baltimore	Baltimore (city)	115	41	76.2	+ 1.5	98	11	58	30	27	12.28	+ 8.07	3.12	0	15	9	10	12	s.	U. S. Weather Bureau.
Cambridge	Dorchester	25	13	78.4	+ 2.1	101	11	55	21	31	10.89	+ 6.35	3.63	0	15	10	15	6	s.	T. E. Keenan.
Cheltenham	Prince George	230	11	76.4	.....	99	11	52	22	33	6.49	.....	1.67	0	16	13	13	5	se.	J. E. Burbank.
Chestertown	Kent	80	26	75.6	+ 2.0	94	11	56	20†	28	10.07	+ 5.33	1.85	0	13	15	13	3	se.	M. W. Thomas.
Chewsville	Washington	530	14	73.6	+ 1.4	100	11	47	19	35	8.61	+ 4.78	3.09	0	17	10	18	3	se.	D. Paul Oswald.
Clear Spring	do	650	14	72.3	+ 0.7	97	11	52	20	33	8.93	+ 4.40	2.35	0	17	10	18	3	w.	W. W. Frantz.
Coleman	Kent	80	13	74.8	.....	95	11	55	20	30	12.04	+ 7.88	2.66	0	15	13	5	13	se.	J. S. Harris.
College Park	Prince George	170	21	76.8[a]	+ 3.2	101[a]	11	46[a]	22	44	7.38	+ 3.30	1.64	0	12	20	0	11	e.	Prof. H. J. Patterson.
Cumberland	Allegany	700	37	.....	.....	.....	.....	.....	.....	.....	9.05	+ 5.76	1.60	0	15	13	3	15	.....	J. W. Frantz.
Darlington	Harford	300	19	72.8	+ 0.3	94	11	52	22	32	12.83	+ 8.21	3.83	0	12	12	12	7	sw.	Prof. A. F. Galbreath.
Denton	Caroline	42	16	75.2	+ 1.6	95	11	49	21	33	13.83	+10.27	3.80	0	14	19	6	6	se.	H. B. Mason.
Easton	Talbott	35	20	74.6	+ 0.2	93	11	54	21	26	13.72	+ 9.96	4.10	0	15	12	9	10	sw.	Henry Shreve.
Emmitsburg	Frederick	720	38	73.1	+ 0.4	96	11	54	30	30	12.19	+ 8.55	4.20	0	15	10	7	14	s.	Joseph M. Sheridan.
Fallston	Harford	450	41	73.0	+ 1.0	93	11	52	20	31	15.63	+10.79	4.38	0	18	4	25	2	se.	J. H. Curtiss.
Frederick	Frederick	275	34	74.6	+ 1.0	97	11	51	20†	31	10.22	+ 6.95	2.32	0	20	15	6	10	se.	C. Schley Birely.
Frostburg	Allegany	1,929	10	72.5	.....	96	8†	46	20	37	8.70	.....	2.10	0	19	8	21	2	nw.	R. A. Walter.
Great Falls	Montgomery	200	20	.....	.....	.....	.....	.....	.....	.....	7.51	+ 4.04	1.60	0	11	14	6	11	sw.	J. W. Bissett.
Green Spring Furnace	Washington	450	19	75.4	+ 1.8	104	11	49	21	37	7.86	+ 3.58	1.98	0	15	15	10	6	nw.	E. G. Kinsell.
Keedysville	do	400	7	75.4	.....	101	11	49	20	37	8.52	.....	3.40	0	16	14	14	3	s.	J. A. Miller.
Lake Montebello	Baltimore (city)	.....	2	75.0	.....	97	11	55	21	32	13.32	.....	6.03	0	14	14	5	12	se.	Martin L. Dobler.
Laurel	Prince George	150	17	74.3	+ 0.3	97	11	50	19†	38	8.40	+ 3.84	1.75	0	12	12	17	2	.....	Dr. T. M. Baldwin.
Leonardtown	St. Marys	.....	1	78.2	.....	98	17	56	22	32	7.05	.....	2.92	0	16	13	8	10	s.	Brother Fidelis.
Monrovia	Frederick	630	24	74.6	+ 1.3	99	11	52	20	33	9.65	+ 5.07	3.08	0	15	11	11	9	s.	J. H. Lawson.
Pocomoke City	Worcester	37	18	78.6	+ 2.6	97	14	58	21	33	3.89	− 0.10	1.04	0	10	22	4	5	s.	Hon. R. M. Stevenson.
Princess Anne	Somerset	17	18	74.8	+ 1.1	91	11	52	21	27	7.89	+ 2.84	1.83	0	11	3	24	4	sw.	J. R. Stewart.
Rockville	Montgomery	421	4	74.2[a]	.....	93[a]	11	55	19†	25	7.70	.....	1.42	0	15	11	3	17	.....	Dr. G. E. Lewis.

TABLE 1.—*Climatological data for August, 1911. District No. 1*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Maryland—Continued.																				
Salisbury	Wicomico	23	6	77.0	.....	96	10†	51	21	32	6.59	.....	1.88	0	12	14	13	4	sw.	W. E. Downing.
Solomons	Calvert	20	20	79.4	+ 2.2	99	17	62	30†	27	7.70	+ 3.69	2.02	0	12	6	11	14	se.	Dr. W. H. Marsh.
State Sanatorium	Frederick	1,200	3	72.6	.....	97	11	52	30	30	11.25	+ 7.96	3.76	0	18	15	6	10	sw.	Joseph V. Shimek.
Sudlersville	Queen Anne	65	12	75.7	+ 2.0	97	11	51	21	37	9.82	+ 6.50	3.15	0	15	14	8	9	e.	J. E. Higman.
Takoma Park	Montgomery	320	13	74.2[a]	+ 1.0	98[a]	11	53	21†	34	6.00	+ 0.77	1.65	0	13	7	18	6	.....	L. M. Mooers.
Taneytown	Carroll	450	12	73.8	.....	98	11	50	20	32	11.29	+ 7.27	3.65	0	12	11	18	2	e.	James B. Galt.
Townson	Baltimore	465	3	72.8	.....	98	11	50	20	37	13.41	.....	5.38	0	13	15	7	9	se.	C. W. E. Treadwell.
Van Bibber	Harford	100	14	74.0	+ 0.4	94	15†	50	20	32	11.08	+ 5.15	2.74	0	14	13	13	5	se.	W. Benj. Ford.
Westernport	Allegany	1,000	17	73.4	+ 1.9	101	11	46	20	42	8.13	+ 4.72	1.15	0	12	.....	.....	.....	.....	Prof. O. H. Bruce.
Westminster	Carroll	860	18	74.6[c]	+ 3.2	97[c]	11	51	22	32[c]	10.43	+ 5.22	2.56	0	15	16	7	8	sw.	Prof. G. F. Morelock.
Woodstock	Baltimore	392	37	74.6[d]	+ 2.3	95[e]	17†	50[d]	21†	36[d]	11.28	+ 7.14	5.03	0	11	15[b]	1[b]	13[b]	nw.	Rev. A. J. Donlon, S. J.
Delaware.																				
Delaware City	New Castle	20	9	75.6	.....	92	11	54	20	27	6.02	.....	1.20	0	12	20	4	7	s.	H. Morton Price.
Dover	Kent	40	23	75.8	+ 1.0	99	11	51	22	34	10.32	+ 6.22	3.10	0	14	10	11	10	e.	Thos. F. Dunn.
Milford	do	20	27	75.2	+ 0.4	95	11	53	21	27	14.68	+11.14	2.97	0	15	14	9	8	se.	Chas. J. Holzmueller.
Millsboro	Sussex	20	19	75.6	+ 1.1	97	11	51	21	30	7.42	+ 2.34	1.66	0	11	15	7	9	sw.	Rev. L. W. Wells.
Seaford	do	40	18	75.0	+ 0.5	93	11	52	21	28	10.90	+ 6.88	2.46	0	14	17	5	9	se.	E. B. Brown.
District of Columbia.																				
Washington	.....	112	41	76.6	+ 2.1	100	11	54	21	31	7.27	+ 2.87	2.12	0	16	10	11	10	s.	U. S. Weather Bureau.
Virginia.																				
Culpeper	Culpeper	450	3	75.5	.....	98	11	51	22	34	8.84	.....	3.00	0	14	4	22	5	se.	Col. H. C. Burrows.
Dale Enterprise	Rockingham	1,350	32	73.2	+ 1.0	98	11	46	22	42	5.96	+ 1.92	1.45	0	14	10	18	3	se.	Rev. L. J. Heatwole.
Eastville	Northampton	15	1	79.8	+ 2.9	98	11	61	19†	30	4.55	+ 0.23	1.29	0	7	16	8	7	sw.	Thos. B. Robertson.
Fredericksburg	Spottsylvania	100	22	76.0	+ 0.5	97	11	52	22	36	6.72	+ 2.10	2.85	0	14	12	14	5	se.	S. G. Howison.
Lincoln	Loudoun	500	10	76.8	+ 3.6	102	11	47	22	46	8.75	.....	2.84	0	11	13	13	5	nw.	Dr. Geo. Roberts.
Mount Weather	do	1,726	7	70.9	+ 1.5	91	11	52	30	22	11.48	+ 7.86	4.19	0	14	8	11	12	se.	U. S. Weather Bureau.
Quantico	Prince William	16	14	79.2	+ 4.7	98	17	60	21†	32	7.02	.....	2.02	0	9	18	10	3	nw.	Rich., Fdsbg. & Pot. R. R.
Staunton	Augusta	1,380	19	74.6	+ 1.5	96	11	52	22	33	6.56	+ 2.70	1.44	0	18	12	9	10	sw.	Ernest Nothnagle.
Warsaw	Richmond	160	19	78.6	+ 3.1	95	2†	56	22	31	7.18	+ 2.64	2.40	0	9	8	16	7	s.	C. H. Constable.
Woodstock	Shenandoah	927	15	74.3	+ 0.6	100	11	49	20†	39	10.23	+ 6.39	2.76	0	18	14	11	6	w.	Mrs. A. G. Artz.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 1, North Atlantic States.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Maine.																																	
Ashland	St. John								.03			.15								1.54							.73			.27			2.72
Bar Harbor	Coast											.15			T.		.30		T.	.70				T.			.30		T.	.15		.30	1.90
Cornish	Saco											.10				.23			.02	.78							.35		1.32	.11		.22	3.13
Danforth	Penobscot											.20					.30			.30				T.			.15			.10			1.05
Eastport	Coast											.06		T.	.27		.77			1.08							.25			.03		.07	2.53
Eustis	Kennebec	.02	T.					.01	T.			.59			T.	.75	1.42		.22	.51				T.			.29			.19	.39		4.39
Fairfield	do															.18				1.35										.70			2.38
Farmington	do	.28						.02				.23			T.	T.	1.15			.90				T.			.51			.43	.38		3.90
Gardiner	do	.03										.27					.24			1.14							.33			.11	.46		2.59
Houlton	St. John											.10					.50	1.90									.30					.01	2.80
Howe Brook	Penobscot						2.00										1.50			1.25										1.30			6.05
Lewiston	Andr'sc'g'in											.15				.13	.19			.89							.24		T.	.62		.12	2.34
Madison	Kennebec											.18				*	3.10		.02	1.92						*	.73		1.00			.06	7.01
Millinocket	Penobscot											.36			.04	.05	.70			1.38		T.		.01			.79		.02	.55			3.90
North Bridgton	Saco								T.			.31			T.		.72			.58							.27	.25	.35	.34			2.82
Oquossoc	Andr'sc'g'in	.15						.48			.58						3.05		.20	1.20				.20			.43			.50			7.79
Orono	Penobscot															.12	.65		.50	.80							.53			.34			2.94
Patten	do											.25			.23		1.18			1.82				T.			.85		T.	.22			4.55
Portland	Coast								.01	.01		T.				.21	.05		.20	.48						.24	.31		.27	.32		.46	2.56
Presque Isle	St. John											T.					1.25	T.		.65							.72				.25		2.87
Rumford Falls	Andr'sc'g'in	T.										.33				1.76	.33		.69	.46						T.	.36		.91			.01	4.85
Winslow	Kennebec											.13			T.		.20				1.50							.15	.55			.10	2.63
New Hampshire.																																	
Alstead Center	Connecticut	.16										.03				.23	.13	.04	.19	.47							.28	.40	T.	.46	1.38		.02	3.79
Benton	do	.42										.65				.96			.61					T.			.16		.56	.90	.16			4.42
Bethlehem	do	.02										.82				.49	.26		.54	.49	.09							.15		1.93	1.28			6.07
Brookline	Merrimack															1.65			.48								.68		.28	.58	.50		1.15	5.32
Concord	do		T.	.01								T.				.39		.01	.63	.01							.43	.20	T.	1.99	.34		.23	4.24
Durham	do															.40			.98								.82			.78	.82	.04	.42	4.26
Franklin	do	T.										.13				.05	.17		.24	.45	T.						.08	.42		.11	2.25		.09	3.99
Grafton	do																																
Hanover	Connecticut											.25				.55			.65								.35	.30		.88	.42		T.	3.40
Keene	do	.29										T.				.42	.10	.02	.78	.23					T.		.31	.63	.01	.26	.78		.07	3.90
Nashua	Merrimack															2.03		.01	.80						T.		.33	.15	.12	.32	.76		.65	5.17
Newton	dc															1.33			.74								.25	.25	T.	.32	.54		.98	4.41
Plymouth	do	T.										.41				.12	.41		T.	.42							T.	.13		.31	.73		T.	2.53
Vermont.																																	
Bloomfield	Connecticut											.60				.28	1.40	.12	.19	.47	.11						.11		.68	1.33			5.49
Cavendish	do											.12				.35	.10	.02	.80	.52	.01						.19		T.	.41	.37		.04	2.93
Chelsea	do							.42				.41				.42			.22	.38							T.	.22		3.40	.04			5.51
Manchester	Hudson							.33				T.				T.								T.			.41				2.03			2.77
St. Johnsbury	Connecticut							.01		T.		.34				T.	.84		.38	.80	.07			T.			T.	.12		.71	1.92			5.19
Vernon	do															1.60		.21	.44						.01	.80	.53	.08	.96	.39		.30	5.32
Woodstock	do											.13				.21			1.34								.28		.73				2.69
Massachusetts.																																	
Amherst	Connecticut	.05										.02				1.41		.13	.49						T.	.72		.46	.69	1.24		.71	5.92
Ashland	Merrimack	.01										.01				.33	.04		.43							*	.40	*	1.07	*	1.56	1.30	5.15
Bakers Bridge	do														.90		.05		.62							.29		.50	.10	.87	.04	.83	4.20
Bedford	do											T.				.47	.51	.04	.61	.03						.38	.11	.42	.29	.98	T.	.66	4.50
Blue Hill	Coast		T.							T.		T.				.05	.10	.01	.54							.43	.06	1.46	.06	2.26	.05	1.68	6.70
Boston	do											T.				.52	T.	T.	.47						T.	.18	.04	.53	.11	1.13	.02	1.18	4.17
Chestnut Hill	do															.51	.05	T.	.48						.04	.21	.44	.45	1.25	.30	.40	.88	5.01
Clinton	Merrimack															1.21		.03	.51							*	.37	*	*	*	2.04	1.15	5.31
Concord	do											T.				.22	.87	.04	.46	.09						.34	.13	.40	.18	.90	.02	.95	4.60
Fall River	Coast											.01				.14		.01	.01						.01	.09	.30	.63	.30	.13	.25	1.60	3.48
Fitchburg	Merrimack															1.35	.67	.07	.65	.03						.55	.25	.44	.49	1.34	.02	.62	6.48
Framingham	do	.01														.41	.04		.62							*	.29	*	.75	*	1.28	1.26	4.66
Haverhill	do						T.									T.	1.46		.15	.36						.26	.33	.09	.27	.77	T.	.70	4.39
Hingham	Coast											T.				.37		.03	.33						T.	.33	.13	1.30	*	1.69	.08	1.81	6.07
Hyannis	do															.11			.30							.31	1.44	1.64		.38	*	2.94	7.12
Jefferson	Merrimack															1.88		.06	.44							*	.48	*	*	1.84		1.13	5.83
Lake Cochituate	do															.42	.03		.65						T.		.27		.99		1.24	1.22	4.82
Lawrence	do											T.				1.65		.01	.80	T.						*	.68	.27	.32	.95	.01	.87	5.56
Leominster	do		T.				T.					T.				1.14	.15	.05	.51							.50	.18	.37	.22	.95	.02	.88	4.97
Lowell	do															1.81		.02	.54								.61		.81	.94	.07	.95	5.75
Middleboro	Coast							T.								.13		.01	.24						T.	.20	.24	.73	.01	.07	.30	1.37	3.30
Monson	Connecticut	1.00										T.				.70		.05	1.00							.30	.12	.64	.30	2.30	.08	1.13	7.62
Nantucket	Coast											T.				.54	.26	.01	.30					T.	.01	.08	.26	1.41	.32	.40	T.	.39	4.05	8.03
New Bedford	do																																
Norfolk	do									T.		T.				.25		T.	T.	T.	.78						.70	1.71	.20	2.43	.27	2.00	5.34
Plymouth	do																.09		.34							*	*	1.62	.08	.32	.85	.84	4.14
Princeton	Merrimack															*	1.20	.15	.52							*	.54	*	*	*	2.14	.98	5.53
Provincetown	Coast																.43									.63	.36	1.10	.05	.26	.12	1.22	4.17
Rockport	do		.05														.75		.20	.48						.50	.10	.35	.15	1.10	.10	.80	4.58
Rutland	Connecticut											T.				1.75		T.	.55						*	*	1.06	.32	*	*	1.45	1.06	6.19
Somerset	Coast											T.				.12		.04	.14						.10	*	.51	1.00	T.	.11	*	1.85	3.87
South Egremont	Housatonic						.60									1.41			.13						.22	.54	.27	.02	2.01	.20	.03	.58	6.01
Spot Pond	Coast					.02						.12				.80	.02		.40						*	.35	*	*	*	*	2.81	4.52
Springfield	Connecticut															1.02		.05	.60						.10	.50	.24	1.08	1.85	.60	.62	.67	7.33
Sterling	Merrimack															1.23		.06	.49							*	.50	*	*	2.05		.94	5.27
Taunton	Coast											T.				.13		.02	.55							*	*	*	1.73	T.	*	*	2.30	4.73
Turners Falls	Connecticut	T.										T.				2.45		.19	.80	T.						.47	.65		.42	1.31		.35	6.64
Westboro	Merrimack						T.					T.				*	.46	.03	.70								.38	.70	T.	.30	.65	1.20	4.42
Williamstown	Hudson						T.	.53				T.				.63	T.	.37	.31						T.	.52			1.09	.94		.02	4.41
Winchendon	Connecticut											.03				1.60	.28	.10	.83	.03						.48	.40	.10	.34	1.17		.52	5.88
Worcester	Coast		T.									T.				.12	.48	.01	.48								.26	.86	.62	1.01	.04	.89	4.77
Rhode Island.																																	
Block Island	Coast											T.				.38			.05						.04	.35	.72	1.53	3.47	.11	.66	2.48	9.79
Bristol	do															*	.19	.03	.09						*	.09	.39	*	.92	.13	.10	2.02	3.96
Greene	do															.20		.31								.58	*	*	1.15	.98	.25	1.78	5.25

TABLE 2.—*Daily precipitation for August, 1911. District No. 1*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Rhode Island—Con.																															
Hope Valley	Coast	.04														.29	.04		.17					T.	.26	.36	1.10	.40	.16	.31	1.73	5.86
Kingston	do	.15														.36			.12					.18		.74	1.16	.73	.10	.30	2.40	6.24
Narragansett Pier	do											T.				.30	.10		.12	.03				T.	.32	.54	1.86	1.21	.16	.21	2.58	7.43
Pawtucket	do				T.											.10		.02	.82					*	*	.88	*	1.07	.68	.42	1.70	5.69
Providence	do		T.													.14	T.	.02	.57					T.	.30	.18	1.26	.08	.39	.28	1.64	4.86
Wallum Lake	do	T.														.20	.06		1.40						.88		.99		1.33	.47	.94	6.27
Connecticut.																															
Bridgeport	Coast												T.			.55			.14					.19	.32	.26	1.33	.50	.20	.43	2.09	6.01
Canton	Connecticut									.08						.68			.12						*	.98	.70		1.42	*	1.40	5.38
Colchester	Coast	1.01														.27			.47					T.	.54	.32	.69	.32	1.79	.33	1.49	7.23
Cream Hill	Housatonic															.93			.69						.66	.34	.48	.56	2.10	.21	1.30	7.27
Falls Village	do											.02				.83			.16					.01	.75	.04	.40	.30	2.30	.13	1.17	6.11
Hartford	Connecticut		T.							T.		T.				.34			.13					.06	.57	.59	.65	.19	1.53	.28	1.22	5.56
Hawleyville	Housatonic															.63	.04		.63						.60	.80	.57	.32	2.30	.39	1.50	7.78
Lake Konomoc	Coast																.30			.24						.40	.40	.60	.60	.50	1.10	4.14
New Haven	do		T.									T.		T.		.36			.06					T.	.25	.23	.29	1.17	.49	.19	.46	2.07	5.57
New London	do															.32									.31	.45	.40	.75	1.40	.30	.70	2.35	6.98
North Grosvenor Dale.	do																.12	.08	.44							.45	.18	.39	.12	.59	.13	.96	3.46
Norwalk	do															.64			.12						*	.48	.32	*	1.04	.15	*	2.43	5.18
Southington	do		T.									T.				.50			.60							.80	.40	.85	.50	1.75	.50	1.30	7.20
South Manchester	Connecticut															.29			.29							*	.88	.50	.38	.46	.20	.79	3.79
Storrs	Coast															.37			.48							.55		.70		1.45	.21	1.32	5.08
Wallingford	do															.35			.18						.23	.76	.54	.57	.20	.22	.46	1.24	4.75
Waterbury	Housatonic															.09			.72						*	.68	.59	.71	.44	2.53	.37	1.38	8.11
West Simsbury	Connecticut									.08						.56			.75							*	1.11	*	.82	1.29	.11	1.42	6.14
New York.																															
Addison	Susq'hanna		.03	.02	.04				.16	.15		.04				.82			.08					T.	.23	.83	.08	.09	3.34	.32		.03	6.26
Albany	Hudson								T.			.01				1.62		.11	1.10	T.					.03	.80		.03	.61	.22		T.	4.53
Alfred	Susq'hanna		.58	.04	.07	.06	.40		.16			.10				1.70		.05	.57							.55	.63	.65		1.35	.07	.02	7.00
Amsterdam	Mohawk							.20		.15						.20			.06	.10				T.		.40	.30		1.10	.10		T.	2.61
Athens	Hudson						1.45					T.				.52		T.	.78						T.	.36	.54	.06	2.66	.78		.28	7.43
Ballston Lake	do					.05			.10			.05				*	.21	.54	.09	.02						.36	.22			.61	.06		2.31
Bedford	Coast								.01							1.85	.01		.15					.03		.56	.55	.67	.41	1.15	.41	1.63	7.43
Binghamton	Susq'hanna		T.	T.		.01	.16					.06				.34			.04						.15	.74			.55	.27			2.32
Blue Ridge	Hudson							.38				.33					.30	.08		.15		.22								1.17			2.63
Bouckville	Susq'hanna				.05				.17			.09				.09		.19	.19	.45						.56	.07		2.11	.20			4.17
Carmel	Hudson															.50				.85						.35	1.57	.67	.60	2.71	1.00	1.41	9.66
Chatham	do						.90	.02				.01				1.12	.10	.05	.43							.49	.57	.04	.27	2.71		.29	7.00
Cooperstown	Susq'hanna		.26	.04		.04	2.80		.06			.10				.77	.13		.49				.02		.02	.49			2.17				7.39
Corinth	Hudson						.07			.12		.13					.10	.40		.20						.22	.15			1.40			2.79
Cortland	Susq'hanna						.11			.06		.08				.79	.23		.12	.14				.01	.01	.45			.66	1.03			3.69
Cutchogue	Coast															.93	.03		.30							.74	.35	.64	2.17	.28	.39	4.49	10.02
De Ruyter	Susq'hanna									.44						.48	.05		.35	.01					.03	.56	.08		1.47	.09	.01		3.56
Glens Falls	Hudson						T.					.15				.07	.02	.20	.10	.05						.21	.16		1.76	.09			2.81
Gloversville	Mohawk						0.8	.05		.26		.02				.10		.62	.08	.14						.36	.14		1.65	.05			3.55
Greenfield Center	Hudson							.10								.10		.35	.40							.36	.22		1.30				2.83
Greenwich	do											.08				.07	.06	.22	.28	.22						.40	.21		.45	.66			2.61
Griffin Corners	Delaware			.08		T.	.02	.69				T.				.25			.62						T.	.55	.64	T.	.83	1.65		.12	5.45
Haskinville	Susq'hanna		.18		.09		*	.10	.50			.18				1.15		.05	.39					T.	.15	.70	.12	*	1.97	.15		T.	5.75
Homer	do		T.	T.			T.	T.	.20	T.		.17				.62			.37						.02	.41	.06	T.	1.42	.10			3.37
Hoosick Falls	Hudson							.55		.05		T.	.05				.35	.28		.80						.15	.47		.23	1.52			4.45
Indian Lake	do											.30						.31		.50						.10	.15		1.10	.10			2.56
Jeffersonville	Delaware			T.		T.										T.			.28						T.	1.37	.37	.08	.03	1.80	T.	.34	4.27
Knowelhurst	Hudson											.09						.42		.22						.17	.15		1.03	.58			2.66
Liberty	Delaware				.03			.05				.15				.10		*	.33						.70		.90	.83	2.50	.10	.15	.30	6.14
Little Falls	Mohawk						.45			.15		T.				.15	.24	.26	.13					T.		.50	.08	.08	.98				3.02
Mechanicsville	Hudson							.07				.05				.19	.35		.09						T.	.70		.15	.61				2.21
Mohonk Lake	do						.56													.19					.44	.40	.40	.20	.40	1.75	.48	.97	5.85
Morehouseville	Mohawk			.20			.60		.87			.15														.83	.13		1.75	.13			4.66
Morrisville	Susq'hanna			T.				.06		.12		.11						.19	.22	.26						.53	.05		*	1.70			3.24
Mount Hope	Coast										.10					1.60			.25						.24	.20	.35	1.80	.25	1.10	.60	2.10	8.59
Newark Valley	Susq'hanna			.03		.04		.31	.11			.07				1.69			.12						.16	.90			.65	.14			4.22
New Berlin	do							.32		.04		.09	.04				1.31			.31					T.	.29	.25		T.	1.04			3.69
Newcomb	Hudson						.06					.50					.33					.44						1.15					2.48
New Lisbon	Susq'hanna			.05			.91					.09				1.02			.09	.17						.42	.21		1.20	.22			4.38
New York City	Coast									.01		.07				.61			.18					T.	.07	.96	.08	1.00	.03	.25	.88	3.24	7.38
North Creek	Hudson											.35						.28	.28							.27			1.85				3.03
Northville	do						.12		.77		.10					.10	.20		.10	.15						.24			1.80				3.86
Norwich	Susq'hanna							.16	.16			.18					1.40			.26						.36	.21		.06	.81			3.60
Oneonta	do						.57	.06				T.				.67			.37	.09					T.	.63	.12		.98	.35			3.84
Oxford	do						T.	.10				.18				2.00			.15						T.	.75			1.15	.28			4.61
Port Jervis	Delaware			T.			.02			.04						.01			.24					.08	.11	.67	.54	.20	.05	3.50	.13	1.10	6.69
Salisbury	Mohawk						.14		.66			.11				.07	.24	.40								.84	.12		.16				2.74
Scarsdale	Coast											T.	.10			2.20			.18						.30	.63	.40	.51	T.	.15	.60	2.40	7.47
Setauket	do											T.	T.			1.32	T.		.40						T.	.63	.18	.32	.57	.08	.55	4.25	8.30
Sherburne	Susq'hanna						.36					T.					.72			.45					.28				1.18				2.99
Southampton	Coast												.15			.46			.16						T.	.32	.77	1.14	.33	.21	.58	3.04	7.16
Spier Falls	Hudson								.04			.08				.10		.39	.05	.09						.28	.11		1.40	.30			2.84
Trenton Falls	Mohawk					.10				1.20			T.				.31		.18	.29	T.			T.		T.	.67			1.50			4.25
Tribes Hill	do						.20					.10				.20		.10		.20						.70			1.50				3.00
Utica	do				.08	.20				.30		.06	.09						.10		.30					.45	.25			1.85			3.68
Wading River	Coast											.02				1.10	.18		.25							.82	.38	.35	1.50	.50	.60	4.10	9.80
Wappingers Falls	do						.08									.15			.62						.10	.54	.52	.48	.78	2.18	.28	1.35	7.08
Warwick	do																		.38			.06				.37	.75	1.18	.05	3.17	.25	1.50	7.71
Waverly	Susq'hanna			.71	.04					.02						.44			.08						.15	1.14	.06		.74	.64			4.02
Wells	Hudson						.24			.12		.07					.03	.50	.05	.24						.35	.10		1.68	.09			3.47
West Berne	Mohawk						.01			T.		T.				.31		.41	.23							.75	.65		.20	.21			2.77
West Point	Hudson							T.								.70									.40		1.10	1.80	.30		2.30	.50	7.10
Windham	Mohawk						.30	.22				.06				.35		.10	.33						T.	.52	.37	.06	.73	.86		.09	3.99
Pennsylvania.																															
Altoona	Susq'hanna			.05	.28	.20	T.			.25	.05					T.		T.		.10	T.				.29	.86	.44	.05	T.	1.47	.28	.60	4.62
Ansonia	do			.14	.18	.42				.25	.05						.98	T.		.12					.04	1.20	.77		.06	2.31			6.52
Bellefonte	do		1.10	.45	.26					.50						.56			.10					1.40	.40		.04	1.20	.74	.80		7.55

TABLE 2.—*Daily precipitation for August, 1911. District No. 1*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Pennsylvania—Con.																																	
Bethlehem	Lehigh				.14	.01		.02		.01				.21					1.38						.11	.31	.36	.61	.23	.94	.41	2.03	6.77
Catawissa	Susq'hanna		1.47		.07		.24							.30		.58			.20						.40	.80	.50	.09	1.30	1.30	.23	.95	8.43
Center Hall	do		1.00	.68	.90				.08							.57			.18					T.	.35	.85	.17	.07	.22	1.97	.12	1.03	8.19
Clearfield	do			.18	.33	1.43	.10									.86			.15						.80	1.15			.50	1.02	.08		6.60
Coatesville	Coast		.06	.41		.05							.12	.12		.05		.08	.35					.09	.18	.55	.62	.83	.19	.52	1.23	4.60	9.05
Doylestown	Schuylkill			.52									.44	.45		3.35			.49							1.71	.46	1.22		.39	1.37	3.60	14.00
Drifton	Susq'hanna		.03	.31	.06	.07		.08		.02	.03	.02		.42		.30			.35						.50	.30	.70	.50	.03	2.80	.21	1.15	7.87
Emporium	do		.08	.90	.44				T.							1.26	.05	.09	.48					T.	.94	1.01	.04	T.	1.31	.75		.10	7.45
Ephrata	do			1.56	.06	1.53	.03							.17		.03			.25						.12	.25		.90	T.	.45	.71	2.76	8.82
Forks of Neshaminy	Delaware			.06								.17				2.05			.45								1.12	1.34		.42	1.00	4.21	10.82
George School	do												.23	.13		1.62	.49		.50						.76	.42	1.33	.08	.44	.87	4.97	11.84
Gettysburg	Potomac		2.43	.48	1.40	.02			T.						T.	.29	.01		1.08					T.	.04	.20	.43	1.64	.07	.42	1.00	3.48	12.99
Girardville	Susq'hanna		.60	.33	.13	.12				T.		T.		.14		.53		T.	.14						.45	1.65	.38	.32	2.04	1.52	.72	1.05	10.12
Gordon	do			1.08	.24	.04	.04		T.	.04				.09		.36	.02		.61						.21	1.73	.59	.24	.23	2.95	.22	1.64	10.33
Hamburg	Schuylkill			1.73	.18			.16					.52		.67			1.65							.81	.33	.45	1.65	2.01	.81	1.35	12.32
Hanover	Susq'hanna		.60		1.55	.12									.09	.68		.26	1.03					.02	.40	.18	2.56	.05	.97	1.45	2.62	12.58
Harrisburg	do		1.01	1.94	.74				.10				.01	.01		.65		.15	.15					T.	.29	.51	.23	.66	T.	1.23	.47	1.58	9.73
Huntingdon	Juniata		T.	1.31	.17	T.										.04		.30	.22						.90	.50	.65	.11		1.70	.18	1.06	7.14
Hyndman	Potomac	.56	T.	.15	.41	T.	T.							.10	.15	.21		.12						T.	.40	.50	.75	.81	1.20	2.35	1.00	1.03	9.74
Kennett Square	Coast			1.61	T.	.22						1.16	.36	T.		.39		.09	.24					.17	1.37	.97	1.10	.97	.31		1.40	5.04	15.14
Lansdale	Schuylkill			.86									.08	.26		1.85			.46							.65	.51	.86	.06	.38	1.19	4.07	11.23
Lawrenceville	Susq'hanna		T.		T.			.40	.10							.75			.10						.30	1.20			2.75				5.60
Lebanon	do			.90	.20	.16		.01						.03					.52					.20		.61	.50	.71		.93	.41	1.94	7.12
Le Roy	do		.01	.26	.15	.01			.01	.02		T.				.19	.01		.17						.58	.72	.08		.93	.60		.03	3.77
Lewisburg	do			.76	.15	.06								.08		.43			.10					.02	.58	.75	.45	.10		2.43	.16	.90	6.97
Lloyd	do		.30		.25				.60							.45			.15						.48	.25			.12				2.60
Lock Haven	do			.29	.35			.02	.47							.83			.28						.98	.96	.10	.03	.90	2.06	.04	.28	7.59
Marion	Potomac		.04	.08	.88	.22								.33	.07	.33			.39						T.	1.65		1.54		1.02	.55	1.88	8.91
Mauch Chunk	Lehigh			1.45	.22	.66		.40						.60		.08			.04						.20	.83	.37	.25	.76	1.86	1.14	.50	9.36
Mifflintown	Juniata		.75	.28	.38					.08						.11		.12	.13						1.53	.38	.73	.33		2.64	.34	1.19	8.98
Milford	Delaware				.02											.02			.46					.09	.12	.50	.25	.41	.08	2.31	.19	1.41	5.86
Montrose	Susq'hanna		T.	.03		.08	.62									.18			.54						.35	.55	.50		.50	.70			4.08
Mountain House	Juniata			.28	.26	.04									.12	.20	.09		.12						.11	.29	1.22	.72		2.44	.55	.95	7.39
Mount Gretna	Susq'hanna		.09	2.00	1.70	.03	.44		T.							.24		.05	.24						.05	.86	.58	.96		.45	.45	1.95	10.23
Muncy Valley	do		1.74			.43								.38		.23			.41							2.31				1.53	.61		7.64
New Germantown	do		.58	.45														.26							.04			1.00		2.50	.45	1.20	6.48
Ottsville	Delaware			.42						.13		.12		.08		1.01		.22								.68	.15	.55	.38	.15	.77	2.50	7.16
Philadelphia (1)	do		T.	T.		.07				.33		.48		.06		.78			.30					.09	.35	.91	.67	1.66	T.	.67	2.32	3.41	12.10
Pocono Lake	do			.87										.10		.08		.07	.40						.09	.48	.41	.14	.21	2.14	.26	1.26	6.51
Point Pleasant	do			.54												1.54			.66					.17		1.70	.25	.43		.10	.82	3.42	9.36
Pottsville	Schuylkill		.34	.60	.04	.12								.04		.30			.73						1.26	.53	.26	.38	.35	1.58	.59	1.48	8.00
Reading ‖	do			.29	.15		.67		.01					.42			.59	.07	.01	.67					.29	.82	.21	.12	.31		1.27	1.68	7.58
Renovo ‖	Susq'hanna			.50		.30				.18						.20	.30		.21						.10	1.00	.70		1.05	2.45		.05	6.04
Scranton	do		.25	.03	.02	.18	.26		.03	.01		T.		T.		.07			.41					.16	.31	1.19	.15	.05	2.10	.91	.04	.57	6.84
Seisholtsville	Schuylkill		.36	.52										.26		.33			.28							.86	.26	.38		.82	.51	2.11	6.69
Selinsgrove	Susq'hanna		.88		.19	.03			.03					.40		.78			.27						.11	1.30	1.11	.16	.08	2.28	.24	1.12	8.98
Shawmont	Schuylkill						.30						.11	.25		.80			.40					.15		.57	.65	1.80	.25	.80	1.00	5.87	12.85
Smiths Corners	do			.78												.92			.39							1.82	.24	.40			1.00	3.24	8.79
Spring Mount	do													.20		.72	.05		.61							.56	.27	.59	.19	.35	1.02	3.20	7.76
State College	Susq'hanna		.95	.69	1.32					.15					T.	.52		.09	.12					.07	.59	.56	.12	T.	.21	1.89	.16	.83	8.27
Stroudsburg	Delaware			.04	.01			T.						.02		.02		.01	.32						.07	.62	.43	.51	.30	2.59	.25	1.76	6.95
Towanda	Susq'hanna			.09	.05			.05		T.			T.			.24			.30						.45	.79	.06		.94	.53		T.	3.50
Wellsboro	do			.16	.68				.55							.97			.13						.98	.60			.67	.78		.05	5.57
West Chester	Coast		.15	.05		.82						.06	.16			1.64	.02	.06	.52					.21		.82	.50	1.07	.40	.21	1.29	4.37	12.53
Wilkes-Barre ‖	Susq'hanna			.32		.10	.20	T.		T.				T.	T.		.08			.14						.55	1.28		.08	3.14	.56	.38	6.83
Williamsport ‖	do			.42	.04	.12								T.		1.16			.16					1.30	.26	T.		2.18	.08	.40			6.07
New Jersey.																																	
Asbury Park	Coast															1.88		.15	.41							.82	.51	1.63	T.	.56	1.80	3.52	11.28
Atlantic City	do											.34		.02		.02		.03	.40				T.		.13	1.45	.78	.03	T.	.30	1.34	2.48	7.32
Bayonne	do									.42		.13		T.		.70	.04		.20					T.	T.	.53	.24	.92	.01	.28	.72	4.41	8.60
Belvidere	Delaware															.29			.66							1.60	.80	.65		1.34	.44	1.80	7.58
Bergen Point	Coast									T.		.33		T.		.69			.20						T.	.39	.25	1.22		.11	.74	4.63	8.56
Boonton ‖	Passaic												.14				1.01			.28						.85	.58	.68	.43	.44	.41	1.06	5.88
Bridgeton	Coast					.02								.08		.50		T.	.39						.68	1.72	.50	.60	T.	2.00	.89	1.17	8.55
Burlington ‖	Delaware									.47		.50		.07		.71		.11	.22					.14	.46	.48	.64	1.88	.03	.90	2.73	1.81	11.15
Cape May City	Coast				T.					T.			.05	.02		1.26		.16	.24						.20	.34	.66	.02		.77	1.60	1.95	7.27
Charlotteburg	Passaic															.21		.11	.27						*	.52	*	*	1.51	1.48	.43	1.68	6.21
Chatham ‖	do												.20				.80			.20						1.40	.45	.50	.40	.05	.07	1.40	5.47
Clayton	Coast					T.				T.		1.11		.16		.22		T.	.44					.02		1.10	1.63	2.06		*	2.98	2.15	11.87
College Farm	do											.13				.35			.42					T.		1.70	.40	2.11	.05	.02	.80	6.70	12.68
Culvers Lake	Delaware			T.												T.			.15						T.	.25	.59	.98	.90	3.05	.25	1.67	7.84
Dover	Passaic											.11		.01		1.71			.32						.63	*	.46	.79	.46	.62	*	1.74	6.85
Elizabeth	Coast											.29				.55			.14							.63	*	1.21		*	*	4.54	7.36
Flemington	do											.11		T.		1.21			.43					T.	T.	.93	.38	1.06	.07	.18	.78	3.01	8.16
Haddonfield	Delaware					.53				.03		.55		.06		.50		.01	.43							1.90	1.80	1.96	.01	.60	1.57	2.96	12.91
Hammonton	Coast											1.20		.05		.18		.04	.48						.04	.60	1.52	2.24		.15	2.06	2.73	11.29
Hightstown	Delaware					T.						.39				1.04			.72					.08		.92	.40	2.04		.10	2.06	3.07	10.82
Highwood	Coast											.04				2.10		T.	.16						.06	.46	.44	.43	.13	.10	.48	2.64	7.04
Indian Mills	do									.51		.45		.05		.47			.33							1.16	3.39	2.35	.05	.63	2.44	2.04	13.87
Jersey City	do									T.		.10		T.		.83			.27						T.	1.27	.27	.78		.14	.91	3.64	8.21
Lakewood	do											.31				.70			.34					T.	*	.73	.74	1.70	.30	.77	2.00	2.71	10.30
Lambertville	Delaware									T.		.25		.02		.70			.62					T.		2.05	.35	.85		.37	.69	3.67	9.57
Layton	do																		.21						.13	.46	.45	.47	.54	4.24	.21	1.35	8.06
Little Falls	Passaic											.20				1.32		.46	.30						.29	.34	.42	.73	.15	.25	.48	1.96	6.90
Long Branch	Coast											.16				1.49		.12	.24					.26		1.08	.45	1.45	.12	.37	2.21	3.58	11.53
Moorestown	Delaware					T.				.27		.28		T.		.74		.18	.17					.19		.61	.81	2.03	T.	.19	1.44	3.32	10.23
Newark	Passaic									T.		.23		T.		1.55			.51					.02	.02	1.42	.58	.89		.30	.76	3.98	10.26
New Brunswick	Coast											.40				.48			.55						.05	.80	1.12	2.22	.07	.10	.10	5.75	11.64
Newton	Delaware															.18			.35						.12	.49	1.18	.57	.13	2.63	.40	1.73	7.78
Northfield	Coast											.06		.02		T.		T.	.33						.08	.63	1.87	.14	.04	.40	1.54	2.92	8.03
Paterson	Passaic											.12				1.09		.13	.18						.07	.56	.27	.57	.28	.21	.30	1.85	5.63
Phillipsburg	Delaware			T.						.02						.48			.23						.16	.42	.46	.58		.75	.49	1.72	5.31
Plainfield	Coast											T.		T.		1.00		.32	.29					T.	.10	.49	.22	.73	T.	.30	1.01	3.75	8.21
Pleasantville	do											.42		.02		.01		T.	.61						.11	1.17	2.14	.04		.53	1.66	3.29	10.00
Pompton Plains ‖	Passaic												.12				1.66		.06	.28						.82	.52	.61	.46	.64	.46	1.09	6.72
Rivervale	Coast																		.40						.60	1.25	.20	.40	.30	.50	.92	2.10	6.67
Somerville	do											.05		.01		1.80			.45					T.	T.	.63	.27	.95		.15	.51	3.35	8.17
South Orange	do									T.		T.		T.		1.43			.24					T.	T.	1.46	.44	.60	.30	.10	.60	3.25	8.42
Sussex	Hudson																		.27						.04	.31	.65	.67	.17	3.16	.23	1.60	7.10
Tuckerton	Coast											.75		T.		.24		.06	.50							.51	6.75	.56	T.	.70	2.12	2.55	14.74
Woodbine	do											.03		.06		.26		T.	.37						.03	.46	1.23	.10		.52	1.31	4.19	8.56

TABLE 2.—*Daily precipitation for August, 1911. District No. 1*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
West Virginia.																																	
Bayard	Potomac		.25	2.50	.13			T.						T.	T.	.28	.42		.20						.17	1.20	.79	.48	.20	1.03	1.28	1.92	10.85
Burlington	do	.10			.50		T.								.37	T.								*	*	1.30		.60	.30	2.00	.40		5.57
Harpers Ferry ‖	do			T.	.62	1.50	T.									.05		.25							T.	T.	.60		.78		1.20	3.98	8.08
Lost City	do	.02	T.	.22	.14	T.		T.						.25	.21		.10							.13	.30	.12		.27	1.49	2.00	1.39	T.	6.64
Martinsburg	do			.32		.48								.13	.10	.10		.26						1.25	.20	.65		1.93		*	*	4.58	10.00
Romney ‖	do		.08	.03	.24	.72	.15			.15						T.	.41		.13	.33						.45		.27	1.37	.44	1.70	2.65	9.12
Upper Tract	do	.10	.65		.60	.10	.09								1.02	.10			T.						.22	.23	.35	.30		.85	1.65	2.10	8.36
Maryland.																																	
Annapolis	Coast			7.35	.06	.37						.11	.03	T.	.17	.03			.26						.86	.29	.31	.30	.80	T.	1.71	1.40	14.05
Baltimore	do		T.	.69	2.74	.63	T.							.27	T.	.10		.05	.16					T.	.03	3.05	.53	.08	.06	.87	1.73	1.29	12.28
Cambridge	do			.22	.93	.93							.06	.10	.05	.36			.38						.04	.32	.58	.20		.67	3.63	2.42	10.89
Cheltenham	do		.04	.13	.90	.12							.19		.53	.02	.02		.33							.30	.07	.25	.03	.25	1.67	1.64	6.49
Chestertown	do	.20		.74	.75	.47	.03						T.			.67			.94							.50	.60	1.27		.25	1.80	1.85	10.07
Chewsville	Potomac		T.	.32	.22	.10			.03			.22		.18		.39		.40	.09					.15	.58	.43	.10	.61		1.09	.61	3.09	8.61
Clear Spring	do			T.	1.35	.52	.16		.06				.03	.04	.01	.09	.52		.26	.05						.42	.83	.50		.61	1.13	2.35	8.93
Coleman	do		.20	.92	1.08	.15								.09	.02	.53			.50							.10	1.21	1.65	.21	.85	1.87	2.66	12.04
College Park	do			.05	.83	.15							.25			.03				.15						.52	1.64	.22		.81	1.13	1.60	7.38
Cumberland	do		.70	.80	.45	.20		T.							.35	.40	.40		T.						.15	.70	.20	.30	.40	.90	1.60	1.50	9.05
Darlington	Coast			3.33	1.10	.18							T.	T.		.53		.11	.37						T.	1.00	.83	.93	T.	.61	1.01	3.83	12.83
Denton	do	1.62		.62	1.06	1.00									.38	.08			.35							.87	.84	.23	.11	.47	3.80	2.40	13.83
Easton	do		.12	.74	1.95	.29							.41		2.04	.10			.73							.36	1.01	.21	.19	*	4.10	1.47	13.72
Emmitsburg	Potomac		.30	1.04	.85	.06								.33	.01	.43			.60							.41	.12	2.35	.15	1.09	4.20	.25	12.19
Fallston	Coast			.97	2.42	.10				.05		T.		.09	.20	.35	.02	.04	.37					T.	.26	2.00	.54	1.51	.06	1.06	1.21	4.38	15.63
Frederick	Potomac		.75	.95	1.50	.09			.04			.03	.02	.02	.02	.02	.16	T.	.30					.01	.17	.73	.17	.71	.02	.75	1.46	2.32	10.22
Frostburg	do	.62	.08	.37	.09	.01								.31	.19	.65	.02		.22	.02					.21	.38	.32	.04	.06	2.10	1.23	1.78	8.70
Great Falls	do			.27	1.37	.35	.25										.12		.35							.03	1.22	.45			1.50	1.60	7.51
Green Spring Furnace.	do			.05	.33	.11						.13		.12	.21	.66			.45						.53	.92	.19	.79		.70	.69	1.98	7.86
Keedysville	do			.02	1.03	.03			.05			T.		.05	.02	.38			.40					.04	.04	.46	.15	.65		.50	1.30	3.40	8.52
Lake Montebello	Coast			.28	6.03	.29	T.			T.			T.	.24	.01	.09		T.	.21					T.	T.	1.01	1.36	.17	.06	.56	1.03	1.98	13.32
Laurel	do		.18	1.62									1.03			.29			.30						.20	.90	.85	.03		.25	1.00	1.75	8.40
Leonardtown	do		.01	1.20	.03	.11	.11			.03			.12	.20		.02			.09							.47	.18	.12		.26	2.92	1.18	7.05
Monrovia	Potomac			.45	1.38	.09			.11				.08	T.	T.	.22			.40						.02	.23	.43	1.11	.09	.58	1.38	3.08	9.65
Pocomoke City	Coast			1.04	.69	.40					T.				.12	.11			.06	.28							.05				.58	.56	3.89
Princess Anne	do		.38	.27	1.83	.15									36	1.39			.52							T.	T.	.35		.63	.68	1.33	7.89
Rockville	Potomac			.90	1.06	.68	.22						.04				.04			.19					.02	.40	.54	.78	.20	.06	1.15	1.42	7.70
Salisbury	Coast			.28	.90	.22							.04		.18	.05	1.15		.31						T.	T.	.05	.33			1.20	1.88	6.59
Solomons	do				2.02	.47	.04						.03	T.	.34	T.			.25							.34	.16	.02		1.67	1.13	1.23	7.70
State Sanatorium	Potomac		.25	.57	.53	.13	.01		.02					.50	.01	.58	T.		.38	T.					.16	.57	.20	1.88	.03	.58	1.09	3.76	11.25
Sudlersville	Coast		.04	.44	.02	.25							T.	.35	T.	.37		.07	.55						.02	.44	1.14	1.07	T.	.35	3.15	1.56	9.82
Takoma Park	do			.08	.30	.20	.05						.22				.20		.10							.45	1.65	.15		.05	1.45	1.10	6.00
Taneytown	do		.79	.02		.32									1.00				.48						.07	1.07	.25	1.50	T.	.99	1.15	3.65	11.29
Towson	do			1.06	5.38	.30							T.	.06		.28								12	.05		2.28	.08	.06	.53	1.30	1.91	13.41
Van Bibber	do			.55	2.74	.09				.19						.23			.32						.09	.79	.81	.88	.49	*	1.56	2.34	11.08
Westernport	Potomac		.08	.60											.31	.58			.31						.95	.26	.71	1.02		1.10	1.15	1.06	8.13
Westminster	Coast		.53	.16	.58	.04							.09	T.	.03	.38			.24						.08	1.30	.12	2.15		1.03	1.14	2.56	10.43
Woodstock	do			1.06	.49	.10								T.	T.	.08				.11						.29	2.20	.52	T.	.50	.90	5.03	11.28
Delaware.																																	
Delaware City	Coast			.42	T.	.38							T.	T.		.24	T.	.28	.22							.40	.70	.71	.23	.18	1.06	1.20	6.02
Dover	do			.35	T.	.04						.03		.06		1.58		.29	.57						.71	1.15	.20	.19		.15	1.90	3.10	10.32
Milford	do			.85	.02	2.00					.05		.87		.92	.29	.28		.40						T.	.98	1.80	1.01	.09	T.	2.15	2.97	14.68
Millsboro	do			.06		.34								T.	1.22	1.62			.42						.10	.29	.30	.16			1.66	1.25	7.42
Seaford	do		T.	.33	1.00	.16							T.	.02	1.30	.26			.53						1.35	1.43	.35	.26		.40	1.05	2.46	10.90
District of Columbia.																																	
Washington	Coast		.10	.67	.34	.12				T.		.24		T.	T.	.35		.03	.08						.23	.66	.10	.02	.19	1.67	1.14	1.33	7.27
Virginia.																																	
Culpeper	Rappahannock.			.36	1.23	.53	.46						.80	1.13		.07			.12						.04	.02	.33			*	*	3.75	8.84
Dale Enterprise	Shenandoah			.78	.50	T.	.05		.04				T.		.93	.20			T.					T.	.03	.10	.06	.14	.05	1.09	.60	1.45	5.96
Eastville	Coast			.15	.41										.90		.19		T.	1.29											1.11	.50	4.55
Fredericksburg	Rappahannock.	T.	.03	.33	.88	.56	.05						.03	T.	.06	T.			T.							.06	.03	.11	.13	1.55	1.42	1.48	6.72
Lincoln	Potomac			.17	1.18	.09									.03				.04						.10		1.17	.35		1.25	1.53	2.84	8.75
Mount Weather	do	T.	T.	.01	3.77	.78	.09								T.	.19			.16					.04	.03	.44	.21	.01		1.06	2.74	1.95	11.48
Quantico	do		T.	1.95	.08	.58						.02		.09	.46	1.15	.07		.01						T.	T.	.63		.03	*	1.70	2.02	7.02
Staunton	Shenandoah	T.		.09	.17	.31	.07		.72	.03		T.	.09	.46	1.15	.07			.08						.08	.40	.10	.40	.14	.76	*	1.44	6.56
Warsaw	Rappahannock.		T.	*	*	.83	T.			.75			T.							.05							2.15	.15		2.40		.85	7.18
Woodstock	Shenandoah	1.08	.12	.68	.06	.91	.27			.04				.19	.11	.44	.09		.07						T.	.82	.32	.55		.40	1.32	2.76	10.23

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 1, North Atlantic States.*

Date.	Maine.												Concord, N. H.		Massachusetts.								Providence, R. I.		Connecticut.			
	Eastport.		Greenville.		Orono.		Portland.		Presque Isle.		Rumford Falls.				Amherst.		Boston.		Middleboro.		Nantucket.				Cream Hill.		Hartford.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	69	58	82	59	88	57	68	56	79	65	83	59	87	61	90	61	79	62	86	61	85	60	89	62	86	65	90	64
2....	68	53	77	62	81	54	59	55	80	60	76	64	71	58	82	61	64	60	70	60	69	58	69	60	74	62	76	62
3....	74	53	76	57	80	56	69	56	86	60	72	62	78	58	78	62	67	58	76	55	68	58	73	55	70	60	76	63
4....	73	53	81	53	81	51	69	54	88	54	80	62	82	57	82	62	76	65	77	61	70	60	79	62	76	59	78	61
5....	76	57	82	50	83	50	70	56	87	55	82	55	82	54	84	60	70	62	77	52	70	61	81	60	80	56	84	58
6....	80	60	82	57	86	50	71	59	85	60	83	61	81	60	88	60	70	62	78	61	70	61	80	60	78	62	86	62
7....	71	55	82	60	86	56	75	59	86	62	84	64	84	61	86	61	69	61	81	60	68	60	83	63	82	63	87	64
8....	67	55	78	60	85	57	65	60	86	60	78	65	80	60	86	64	72	63	80	63	71	60	78	64	80	59	83	64
9....	69	57	73	59	82	62	75	62	81	62	84	64	88	65	86	66	81	66	78	64	72	60	79	65	86	61	84	67
10....	83	58	80	56	88	63	84	62	86	60	87	60	92	59	94	58	92	70	90	64	85	67	89	68	92	65	94	65
11....	65	54	69	53	88	52	72	56	76	60	64	54	77	57	82	60	80	62	86	63	79	63	89	62	82	68	87	67
12....	73	52	69	52	76	45	78	54	74	60	74	50	78	50	82	50	80	59	80	51	74	61	80	58	80	52	82	58
13....	77	56	75	50	80	46	81	58	80	48	79	48	82	51	83	51	84	62	80	55	77	60	81	62	78	58	82	63
14....	74	57	79	55	84	56	84	60	82	49	84	54	86	50	91	51	90	63	86	50	80	63	89	62	86	59	89	59
15....	72	55	82	57	86	59	81	65	85	46	84	61	89	57	90	54	91	69	87	56	77	66	88	67	84	63	89	64
16....	62	55	65	58	86	59	75	63	72	56	72	60	75	58	84	62	81	68	82	64	81	66	82	67	78	56	81	68
17....	74	54	70	47	78	50	76	59	72	46	76	57	83	55	84	58	85	65	83	53	82	63	84	65	80	58	86	64
18....	74	57	74	54	83	53	80	60	78	50	78	54	81	51	83	55	87	63	84	58	77	63	82	61	84	56	87	61
19....	58	52	65	52	82	53	71	56	77	50	68	55	71	54	74	57	76	60	75	56	76	60	75	58	70	52	74	59
20....	65	53	65	51	71	49	73	51	65	40	68	51	74	51	76	46	76	56	75	47	71	60	76	54	74	48	75	57
21....	76	56	75	45	77	47	77	53	72	50	77	55	79	44	80	44	81	57	79	44	77	60	79	55	78	54	80	49
22....	73	55	79	52	83	48	72	56	82	55	80	50	82	49	82	52	80	62	78	51	75	59	75	60	82	58	81	59
23....	72	53	69	53	80	50	86	58	70	48	72	54	83	52	83	53	89	62	87	47	75	66	90	58	84	56	88	59
24....	72	53	70	43	84	40	73	54	72	37	74	49	75	48	72	52	73	61	75	52	71	61	74	60	76	54	71	60
25....	66	53	70	43	79	46	65	56	77	37	70	50	61	56	62	58	66	59	63	57	65	58	63	58	61	52	62	57
26....	57	52	61	51	73	52	65	56	67	52	70	55	77	56	79	58	68	60	73	59	69	63	77	60	71	50	78	59
27....	59	51	68	56	76	56	62	58	71	55	67	61	64	58	67	62	62	60	65	62	67	61	65	62	68	56	70	65
28....	66	50	67	55	66	54	70	58	76	55	68	60	75	58	80	62	80	62	81	62	76	62	80	61	67	54	83	65
29....	68	56	63	55	70	54	70	55	69	53	69	55	68	56	69	57	75	62	83	62	78	63	80	60	62	56	75	57
30....	64	52	63	47	67	45	63	53	70	40	66	49	66	51	66	54	62	56	62	56	65	55	60	55	63	54	62	54
31....	57	51	60	41	80	41	58	52	68	34	64	46	59	51	56	54	60	56	60	54	68	54	59	54	61	49	57	53
Mns..	69.5	54.4	72.6	53.0	80.3	52.0	72.2	57.1	77.4	52.2	75.3	56.3	77.7	55.0	80.0	56.9	76.3	61.7	78.0	56.8	73.8	61.0	78.3	60.6	76.5	57.3	79.9	60.9

Date.	New Haven, Conn.		New York.												Pennsylvania.												Atlantic City, N. J.	
			Addison.		Albany.		Binghamton.		Indian Lake.		Little Falls.		New York.		Everett.		Harrisburg.		Philadelphia.		Scranton.		State College.		Wellsboro.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	90	65	96	56	91	64	89	59	91	51	91	63	86	71	88	57	87	67	89	68	89	62	89	62	90	44	81	70
2....	74	65	93	67	88	69	87	68	90	50	91	64	79	69	89	63	85	68	87	68	86	65	85	65	86	44	81	73
3....	75	65	84	68	80	68	78	69	85	64	83	65	75	66	83	65	82	68	82	71	80	68	83	65	81	66	81	72
4....	74	62	81	67	80	68	76	70	87	60	84	65	72	66	84	67	75	68	81	69	77	69	78	66	75	65	79	72
5....	82	58	92	62	88	64	80	68	91	55	87	64	78	66	79	68	81	69	80	68	81	67	80	68	84	63	80	72
6....	80	64	93	64	89	68	85	65	85	54	88	65	82	68	80	61	84	70	86	68	83	65	83	66	85	62	79	72
7....	78	65	98	60	87	70	87	62	87	58	85	61	76	69	86	69	85	68	83	69	86	63	85	64	90	60	78	70
8....	78	67	94	68	83	67	81	70	80	51	82	57	77	67	86	67	82	70	85	67	80	69	87	70	85	65	80	68
9....	81	70	90	60	86	71	80	64	82	64	79	65	83	70	94	59	87	71	86	71	84	65	82	66	87	61	80	74
10....	89	66	98	55	95	64	92	56	85	51	87	67	88	69	93	60	92	65	92	72	93	60	93	58	94	52	84	71
11....	88	70	81	56	79	60	76	58	80	54	77	62	92	71	92	58	94	70	94	72	88	64	88	76	86	60	88	69
12....	79	60	84	52	81	54	77	51	81	41	68	48	78	66	90	65	78	65	79	68	81	56	77	56	79	49	76	70
13....	80	65	91	50	84	57	83	55	82	42	80	56	75	67	83	66	80	70	75	66	80	61	83	64	88	57	75	68
14....	87	61	97	47	89	56	88	49	85	43	84	63	86	65	78	67	84	68	88	67	88	55	82	63	91	49	80	68
15....	83	66	84	57	85	59	81	58	81	45	83	56	84	68	78	64	81	70	88	71	80	63	76	66	81	61	81	72
16....	83	66	85	58	82	66	79	63	75	58	76	58	83	68	85	65	87	68	87	71	83	66	82	64	83	61	87	68
17....	90	67	91	63	86	62	83	60	77	55	80	60	88	71	88	.....	90	66	90	73	88	69	84	69	86	62	92	74
18....	82	61	83	50	79	60	79	54	75	51	75	59	80	63	.....	.....	82	60	83	60	85	60	82	65	79	49	80	62
19....	76	58	75	52	74	59	69	52	67	50	68	53	75	60	.....	.....	76	62	77	62	72	54	75	52	74	48	76	60
20....	76	57	80	42	77	53	72	46	70	36	70	47	76	58	.....	45	77	56	79	61	72	50	73	50	75	38	76	56
21....	80	54	85	43	81	50	81	42	76	34	82	46	80	62	.....	.....	79	54	80	63	80	47	80	47	81	39	78	59
22....	78	58	89	50	83	59	84	56	80	42	84	57	76	64	.....	.....	82	57	82	62	84	52	84	49	86	46	75	62
23....	88	60	84	52	80	63	73	58	78	57	73	61	87	63	.....	.....	87	63	89	64	82	57	78	61	82	52	79	63
24....	77	58	70	53	74	58	65	54	70	40	71	50	75	60	.....	.....	73	61	78	66	67	58	70	47	71	53	76	70
25....	63	58	70	57	64	58	64	57	68	51	64	54	69	59	.....	.....	70	60	77	62	66	59	68	56	66	56	81	68
26....	74	60	76	62	80	59	77	62	75	54	74	54	76	63	78	65	80	65	80	69	75	62	77	56	76	60	79	68
27....	69	66	85	59	75	64	78	60	76	52	77	57	73	68	77	67	76	68	77	70	75	67	78	58	80	60	82	73
28....	81	66	77	64	80	67	84	65	70	62	73	65	83	69	88	72	87	73	88	74	85	68	85	69	82	66	80	74
29....	76	59	67	60	70	58	65	55	67	53	68	55	76	59	79	56	74	60	84	63	68	56	67	54	74	58	80	65
30....	62	54	64	49	67	54	63	52	65	34	65	46	63	54	60	54	61	56	63	57	62	55	59	55	67	49	67	62
31....	58	53	64	48	62	54	62	54	57	36	60	49	64	55	60	54	60	54	61	57	58	54	59	53	60	53	68	62
Mns..	78.4	62.1	83.9	56.5	80.6	61.4	78.0	58.5	78.0	49.9	77.7	57.8	78.5	65.0	82.5[A]	62.3[A]	80.6	64.8	82.3	66.7	79.3	60.8	79.1	60.6	80.8	55.1	79.3	68.0

TABLE 3.—*Maximum and minimum temperatures for August, 1911. District No. 1*—Continued.

Date.	New Jersey.								Martinsburg, W. Va.§§		Maryland.								Millsboro, Del.		Washington, D. C.		Virginia.					
	Bridgeton.		Hightstown.		Phillipsburg.		Sussex.				Baltimore.		Darlington.		Frederick.		Westernport.						Culpeper.		Fredericksburg.		Staunton.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	90	64	90	60	92	61	91	59	94	64	88	72	86	63	90	64	89	50	88	67	92	67	91	63	91	63	89	63
2....	91	65	89	65	90	64	87	58	92	65	90	74	85	69	93	71	94	57	86	67	93	72	92	65	91	67	90	63
3....	80	70	83	69	85	69	78	67	93	72	83	71	78	67	87	71	84	66	81	72	86	71	93	61	92	68	89	66
4....	83	68	79	65	79	68	76	66	84	71	79	70	75	69	84	70	83	67	78	69	83	71	84	71	82	69	88	67
5....	83	67	84	59	84	66	83	64	85	69	79	69	78	68	81	69	83	68	79	68	79	71	80	69	79	69	86	66
6....	87	65	89	60	89	65	86	61	88	69	85	70	83	68	84	70	82	68	81	68	85	69	84	70	84	70	82	68
7....	85	62	83	62	88	65	82	62	89	67	83	72	82	64	86	67	91	65	79	61	86	67	87	69	84	67	87	59
8....	89	61	87	57	86	65	79	60	92	67	83	72	81	65	87	68	98	66	83	59	86	71	89	66	86	64	94	64
9....	91	70	86	67	93	68	90	67	95	71	87	74	89	71	90	69	94	66	90	69	92	72	91	70	90	70	93	66
10....	99	66	95	59	96	61	95	67	68	62	90	70	92	65	90	63	95	56	96	70	95	68	93	67	91	65	93	64
11....	100	68	98	63	96	64	92	65	102	65	98	72	94	63	97	66	101	59	97	70	100	70	98	67	97	70	96	69
12....	89	68	83	63	84	63	84	57	87	67	82	70	82	65	85	67	86	68	80	66	77	71	84	70	89	72	84	70
13....	85	65	75	62	77	62	79	63	85	71	83	72	80	67	85	70	86	68	83	66	87	71	89	71	88	70	90	64
14....	92	65	90	58	91	59	91	53	85	68	84	69	83	68	81	67	91	65	89	66	87	69	85	67	85	68	87	65
15....	97	69	91	68	89	65	88	60	85	68	89	74	86	68	88	70	84	67	89	70	88	72	87	68	90	70	80	66
16....	92	65	87	63	86	65	84	66	91	68	90	70	86	65	88	67	89	61	88	67	90	69	90	65	91	70	89	64
17....	96	68	92	65	92	67	90	62	96	70	96	76	90	69	94	70	94	65	96	70	94	70	93	65	95	69	92	68
18....	86	65	85	62	87	61	87	61	88	65	86	68	83	62	84	67	87	64	87	63	88	67	87	67	87	70	87	67
19....	85	55	77	53	78	56	76	56	80	55	79	62	76	56	79	56	78	52	79	56	79	60	81	56	82	59	83	55
20....	83	57	80	47	81	50	79	46	83	52	78	60	78	54	77	51	80	46	78	54	79	57	78	57	79	61	79	53
21....	87	52	84	48	83	48	83	43	85	51	80	58	81	53	81	52	84	47	79	51	80	54	82	54	82	55	81	54
22....	89	54	83	51	85	52	84	50	87	52	80	60	82	52	82	51	89	51	79	55	86	55	83	51	83	52	85	52
23....	94	58	92	56	92	56	89	56	92	58	91	64	89	57	89	58	91	55	90	60	94	63	92	58	94	58	91	61
24....	87	68	81	64	70	60	75	60	79	58	84	70	81	65	83	66	86	61	90	66	91	69	90	64	94	64	91	60
25....	87	65	69	60	65	58	60	57	84	63	88	66	83	62	83	63	82	62	93	70	89	67	90	65	91	64	89	61
26....	90	69	79	66	82	62	82	60	81	64	83	71	81	68	81	70	78	66	90	71	84	72	88	70	88	70	88	68
27....	85	70	75	68	74	68	73	67	84	68	86	72	82	68	81	69	88	66	88	73	89	73	89	69	90	69	87	68
28....	90	74	89	69	89	69	86	68	90	70	88	76	85	71	89	74	91	68	90	73	91	76	88	74	91	74	86	65
29....	90	66	86	65	78	57	80	57	72	71	87	62	82	61	89	61	77	58	91	72	89	62	88	65	85	68	85	68
30....	67	56	65	55	64	55	63	53	60	57	63	58	63	55	63	57	60	57	72	63	62	59	65	59	68	60	60	58
31....	64	59	59	55	57	53	59	53	61	55	62	59	59	56	61	56	64	55	80	63	63	59	65	56	63	59	64	56
Mns..	87.5	64.3	83.4	60.8	83.2	61.4	81.6	59.5	86.0	64.3	84.0	68.5	81.8	63.7	84.3	64.8	85.8	61.0	85.5	65.6	85.9	67.2	86.3	64.8	86.2	65.9	86.0	63.1

*, ᵇ, ᵉ, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 2, SOUTH ATLANTIC AND EAST GULF STATES.

CHARLES F. VON HERRMANN, District Editor.

GENERAL SUMMARY.

It is well known that the broad expanse of the Caribbean Sea and the warmer parts of the adjacent Atlantic Ocean are the breeding places of subtropical storms or hurricanes which sometimes reach the Gulf or south Atlantic coasts with devastating force. Forming over the smooth surface of the oceans they are symmetrically developed and of great force though of small diameter, but they are often unable to maintain their strength over a land surface; hence in passing from the ocean to the land their energy is often rapidly dissipated. Such was the case with the two disturbances that entered the area of District No. 2 during August, 1911. Both were cyclonic storms of small diameter but of intense energy and both after entering the coast line rapidly lost power and drifted slowly westward as minor barometric depressions accompanied only by more or less general rains.

The first storm entered the Gulf coast west of Pensacola, Fla., on the morning of August 11, and at 7 p. m. was central between Mobile and Pensacola, with a pressure of 29.73 inches at Pensacola. These cities are about 55 miles apart. At Pensacola the wind reached a maximum velocity of 80 miles an hour from the southeast and considerable damage was done to property in the city and harbor; at Mobile, however, the maximum velocity was but 35 miles an hour and no damage was reported.

The second storm, by far the more severe and disastrous, entered the Atlantic coast between Savannah, Ga., and Charleston, S. C., on Sunday, August 27, giving a pressure of 29.02 inches at Savannah and 29.30 inches at Charleston. The distance between these cities is about 75 miles. The winds attained hurricane violence at both points, and wind and water wrought an immense amount of damage in the coast regions of Georgia and South Carolina. Twenty-five lives were lost and the damage to property is estimated at over a million dollars. The storm then drifted slowly westward over central Georgia, losing force but accompanied by heavy rains that caused much damage to railways, farm lands, and crops, especially in southeastern Georgia.

Aside from these untoward features, August, 1911, presented more nearly normal conditions than have been experienced for several months. The temperature was moderately above normal in the States from Georgia to Virginia and moderately below normal in the States bordering the Gulf. Although maximum temperatures reached 100° or above in all sections, the periods of continuous heat were generally of short duration. In the southern portion of the district the warmest weather occurred toward the close of the first decade, but in the north it was delayed past the middle of the month. Comparatively cool weather prevailed during the latter half of the month. The extremes of temperature were well within the limits of previous years.

The rainfall for the month was moderately above normal in all sections with the greatest excess in Virginia and Florida, but the distribution was very irregular. Very heavy rains fell on the Georgia and South Carolina coasts, August 27 to 30, and on other dates also some heavy downpours occurred at widely separated stations. On the other hand, certain regions in northern Alabama and in the upper basins of the Chattahoochee and Savannah Rivers continued to suffer from drought during most of the month. The extremes are found in Georgia where 2 stations in the southeastern portion received over 20 inches and 4 in the vicinity of Atlanta less than 2 inches. Excessive rains fell at several stations near the Gulf coast on the 12th to 13th, on the South Atlantic coast on the 27th to 29th, and in the northern portion of the district toward the close of the month. The number of days with appreciable rainfall was above the normal in all sections.

During the first half of the month the atmospheric pressure was moderately above normal, not, however, rising above 30.2 inches; the maximum pressure generally occurred on the 13th, except on the coast of North Carolina and Virginia where the maximum occurred on the 23d. Between these dates a long period of nearly normal pressure prevailed. The lowest atmospheric pressure in the Gulf States occurred on the 11th or 12th in connection with the storm near Pensacola. In the northern portion of the district the lowest pressure was registered on the 18th during the passage of a disturbance over New England. The minimum pressure for the month was noted during the Savannah-Charleston hurricane, Charleston reporting 29.30 inches at 11.50 p. m. August 27 and Savannah 29.02 inches on the morning of the 28th; range for the district 1.18 inches.

TEMPERATURE.

The temperature conditions during August were fairly uniform and not greatly different from the normal. Comparatively few humid or oppressive days occurred and the periods of greatest warmth were of short duration. The average temperature for the district as a whole was nearly normal, but between the States bordering the Gulf coast and those on the Atlantic some contrasts in conditions prevailed. Over the Carolinas and Virginia a moderate excess in monthly mean temperatures occurred which exceeded 2° or 3° at several places in Virginia north of Lynchburg and in the southeast portion, and in North Carolina over western counties. On the other hand, in the Gulf States equally moderate deficiencies were general, attaining the greatest value in northern Alabama and the northern portion of the Mississippi area. At many individual stations in each State in the district the monthly mean temperatures slightly exceeded 80°, but they were below 70° at only 2 points—Hot Springs, Va., and Rock House, N. C.

In the Gulf States as a rule the highest temperatures occurred at the close of the first decade, 7th to 10th, the maxima ranging from 95° to over 100°. In Florida no definite periods of excessive warmth prevailed, the maxima occurring on scattered dates throughout the month. North of Georgia there was a second brief period of excessive heat, culminating on the 17th. In Virginia the most marked positive departures in temperature occurred from the 8th to the 11th. Maximum temperatures of 100° or above occurred at 10 places in North Carolina and at 12 in South Carolina, but at comparatively few places in other States in the district. The lowest temperatures occurred quite generally at the beginning of the third decade, 20th to 24th, but at a few places in Florida the lowest were registered on the 1st, and in Mississippi and Alabama the 30th and 31st were the coolest days of the month. Minimum temperatures generally ranged between 50° and 60°, falling below 50° at but one point in Virginia.

The mean temperature for the entire district was 79.2° and the departure +0.3°. The State averages were very uniform, ranging only from 77° for the Virginia area to 81° for Florida. The highest local monthly mean was 83.4° at Blakely, Ga., and the lowest was 68.7° at Hot Springs, Va. The highest temperature for the district was 105° at Blakely, Ga., on the 7th, and the lowest was 43° on the 20th at Hot Springs, Va.

PRECIPITATION.

The distribution of precipitation for the month was extremely irregular, but more generallly abundant over large portions of the district than for many months past, and over limited areas the amounts were very large. All States in the district show an average in excess of the normal except South Carolina, where there was a small deficiency. The State averages ranged quite uniformly between 6 and 6.30 inches, except in Alabama and Florida, where they were 4.94 and 9.01 inches, respectively. As compared with August in previous years since 1892, in Florida the current month was the wettest with three exceptions, namely, in 1898, 1901, and 1905. The small regions of marked deficiency in rainfall are found in northern Alabama, north-central Georgia, and in portions of South Carolina bordering the upper course of the Savannah River, where the amounts received were slightly under 2 inches.

The most important facts with reference to the precipitation for the month are the unusually large amounts for the month at a few individual stations and the heavy local rains produced mainly by the two pronounced atmospheric disturbances to which reference has already been made. Over a considerable area in northern Florida and in a small region just north of Tampa the monthly rainfall exceeded 10 inches at 22 stations, with the maximum amount 17.73 inches at Macclenny, Fla. The rainfall generally exceeded 8 inches in southeastern Georgia, with 4 stations reporting more than 16 inches and 2 over 20 inches. The record for St. George, Ga., 24.17 inches, is with one exception (Fleming, Ga., Aug., 1898, 28.60 inches) the greatest monthly rainfall on record for Georgia during the period 1891 to 1911. A few stations in each of the other States in the district also received over 10 inches. The total at Wilmington, N. C., 13.85 inches, is the largest amount received in August during the past 40 years, excepting August, 1903, when 14.35 inches fell. The large amount at Wilmington, however, was due to heavy downpours on the 4th to 5th and 20th.

RIVER CONDITIONS.

Very heavy rains at points in southern Georgia, particularly in the lower valley of the Ocmulgee River near Lumber City, caused a rapid rise to above the flood stage at that place on the last day of August. The rainfall at Lumber City on the 29th was 4.15 inches and on the 30th 9.37 inches with a river stage of 10.3 feet. Warnings were issued at once by the official in charge of the Weather Bureau office at Macon, Ga., for the Altamaha and lower Ocmulgee Rivers. On August 31 the stage at Lumber City was 17.2 feet (flood stage 15 feet) and considerable damage was done in the vicinity. Bridges were swept away, washouts occurred on the railroads and country roads, and crops were damaged. The loss is estimated at about $20,000. The river subsided rapidly.

River conditions in other portions of the district presented no features of special interest, except that extremely low mean stages were maintained by all the rivers. In a few cases the mean stages for August, 1911, were the lowest for the month in many years, and at almost every river station the mean stages were below the normal.

MISCELLANEOUS PHENOMENA.

The prevailing direction of the wind was southwest in the Carolinas; south in Virginia, Georgia, and Mississippi; southeast in Florida; and east in Alabama. The wind movement was much greater than usúal for August, the average hourly velocity being above 11 miles at Hatteras, Charleston, Savannah, and Pensacola. During the severe storm on the 11th, Pensacola experienced a velocity of 80 miles an hour from the southeast and during the hurricane of August 27–28, Charleston reported 94 miles (estimated maximum 106 miles) from the east and Savannah 88 miles from the northwest. The average number of clear days for the district was 12, partly cloudy days 11, cloudy days 8, and days with appreciable rainfall 12. Thunderstorms were numerous but generally of moderate force and there was very little hail. One man was killed by lightning at St. Petersburg, Fla., on August 9.

A waterspout of unusually large dimensions was reported by Capt. I. K. Chichester of the Clyde Line steamer *Arapahoe* to have been observed off Cape Romain, S. C., on Sunday morning, August 20, at 8.30 a. m.

THE SMALL HURRICANE OF AUGUST 11-12, 1911, AT PENSACOLA, FLA.

By W. F. REED, Jr., observer, Weather Bureau.

On the morning of August 9, 1911, a moderate atmospheric depression was evident in the east Gulf which, advancing slowly northward, appeared as a distinct disturbance between Burwood, near the mouth of the Mississippi River, and Pensacola on the morning of the 11th. The atmospheric pressure at Pensacola fell slowly from 29.95 inches at 11 a. m. to 29.73 inches at 5 p. m., the lowest pressure attained, and the 7 p. m. weather map revealed that the storm was then central between Pensacola and Mobile, with pressures of 29.78 and 29.75 inches, respectively, while the pressure at stations to the northeast was over 30.1 inches, giving a fairly steep gradient. Southeast storm warnings were displayed at 3 p. m. at Pensacola.

Moderate northeast winds prevailed to 1 p. m.; the wind shifted to southeast at 3.45 p. m., increasing in

velocity and reaching 64 miles an hour at 3.57 p. m.; the maximum 5-minute velocity between 4 and 5 p. m. was 78 miles an hour and at 5.48 p. m. a maximum of 80 miles was registered. The wind decreased to 24 miles an hour at 6.49 p. m., when the clouds began to break in the west, indicating the passage of the eye of the storm some distance west of Pensacola. Threatening, rainy weather with high southeast winds prevailed again from 8 p. m. to 12 midnight, reaching a maximum of 64 miles an hour. Excessive rain began at 4.04 p. m. and ended at 6.20 p. m., amount 2.73 inches; total precipitation on 11th and 12th, 4.48 inches.

The damage by this storm at Pensacola was less than expected. The wind was steady and did not come in severe puffs as during the hurricane of September 26, 1906. One-third of the roof of the Monarch pavilion on Santa Rosa Island was torn off, and also a few portions of old roofs in the city. The British steamship *Durham*, at anchor in the harbor, drifted into shoal water, but steamed out safely on the morning of the 12th. About 12 barges dragged anchors and grounded, some small launches and fishing smacks were wrecked, and some coal barges belonging to the navy yard went ashore. In the city telegraph and telephone lines were blown down and the street car and electric light services were interrupted. The damage at Pensacola is conservatively estimated as follows: To electric lines, $500; local lumber interests, $500; to launches, barges, etc., $3,000; fishing smacks, $2,500; loss of coal belonging to navy yard, $1,100; total, $12,600.

The highest wind at Mobile was 35 miles an hour and no damage resulted at that place. The storm drifted slowly westward to Louisiana and Texas on the 12th, with heavy rains causing some washouts. Rain and high southeast winds continued at Pensacola on the 12th, the wind becoming light after 4.35 p. m.

THE HURRICANE OF AUGUST 27–29, 1911.

The Charleston-Savannah hurricane of August 27–29, 1911, was characterized by its relatively small diameter but intense energy, its unusual path directly from east to west, and its rapid loss of power after entering the coast line. Advancing from the ocean where no meteorological observations are possible the only indication given of its approach was the low and decreasing atmospheric pressure at Charleston and Savannah on the morning of August 27, and the rapidly increasing winds; nevertheless storm warnings were displayed in both cities by about noon on the 27th, and hurricane warnings at 4.12 p. m. at Charleston and at 5 p. m. at Savannah. As the day was Sunday both offices were greatly hampered in the work of disseminating the warnings, although all means at hand—the telephone, the telegraph, signal flags, and rocket—were utilized as far as possible. The descriptions of the storm prepared by Mr. H. B. Boyer, of the Weather Bureau at Savannah, and Mr. H. S. Cole, at Charleston, indicate the tremendous force capable of being exerted by air in motion and the destruction wrought by the warring elements.

Remembering that the trend of the Atlantic coast line between Charleston and Savannah is exactly northeast to southwest, and that Charleston is thus 65 miles east of Savannah as well as 50 miles north the data available enable a fairly accurate computation of the rate of movement of the entire storm, which, of course, is quite a distinct matter from the velocity of the winds blowing into it, and of the diameter of a chosen isobar. At Charleston the lowest pressure, 29.30 inches, occurred at 11.50 p. m., August 27, wind southeast; at Savannah it was 29.02 inches at 8 a. m., August 28, wind northwest. Assuming that the storm traveled in a straight line from east to west, the trough of low pressure required 9 hours to traverse 65 miles, indicating a velocity of translation of only 7.2 miles an hour. The diameter of the isobar of 29.30 inches surrounding the storm was approximately 100 miles. The center or eye of the storm passed a few miles north of Savannah, where for two hours, from 8.10 a. m. to 10.10 a. m., the 28th, the pressure remained lowest and the wind decreased to only 20 miles an hour. The eye of the storm was about 14 or 15 miles in diameter. At Savannah the wind backed from northwest to south about 10 a. m., the 28th, and the wind again increased suddenly in velocity, heavy rain began, and the pressure rose rapidly. At Charleston the wind veered from northeast to east and southeast, and the destruction of property was much greater than at Savannah because the winds were onshore. At Charleston the damage to property is estimated to have exceeded $1,000,000 and 17 lives were lost. The damage at Savannah was of a minor nature though large in the aggregate.

The storm drifted slowly to southeastern Georgia on the 29th, with the pressure below 29.70 inches, and was accompanied by exceptionally heavy rains near the coast of Georgia, where much damage was done to crops and live stock and numerous washouts occurred on the railroads. County roads suffered and many bridges were washed away.

The following extract from the report by Mr. H. S. Cole, local forecaster at Charleston, S. C., is of interest:

> The barometer continued to fall slowly during the forenoon of August 27, and the wind increased in force from the north, attaining a velocity of 46 miles an hour. At 4.30 p. m. the wind shifted to northeast and the pressure decreased more rapidly, and the wind soon attained hurricane force. At 6.50 p. m. the velocity was 60 miles an hour, at 8.40 p. m. 68 miles, at 9.15 p. m. 72, and at 9.45 p. m. 86. The wind shifted to east or nearly directly on-shore at 11.05 and at 11.20 was blowing with a velocity of 94 miles an hour when the anemometer ceased to properly record. After 11.20 the wind became southeast and was estimated to have attained a velocity of 106 miles an hour. It continued to blow steadily from the southeast all of next day (28th), remaining above 50 miles an hour most of the forenoon, and not falling below 36 miles an hour until after 4. a m. of the 29th. At the moment when the wind shifted to east, 11.05 p. m. 27th, the barometer rose rapidly 0.06 inch, then resumed its rapid fall and reached its lowest point, 29.30 inches, at 11.50 p. m.
>
> Great damage was done by the wind. The electric light and street car services gave out at 8 p. m. and the telephone system was useless after 8.15 p. m. Soon after this tin roofs began to be blown off and hundreds of houses were unroofed and chimneys blown down. A great many windows and display signs were broken. The streets were a tangle of fallen trees and wires. Many houses were destroyed and 4 persons were killed by falling walls and 13 were drowned.
>
> After the high tide on the morning of the 27th the sea began to rise and at the high tide that night reached a point 10.6 feet above mean low water, or somewhat lower than the tide of 1893. A great deal of damage was done by water in the wholesale districts and in other low portions of the city. The water front next day was a confused mass of wrecked vessels and damaged wharfs. The heavy rain increased the damage by flooding unroofed houses. The total rainfall for 3 days was 4.90 inches. The area of greatest destruction lay in the vicinity of Charleston and along the coast to the southwest. The estimated loss at Charleston was over $1,000,000.

The hurricane was not so destructive at Savannah, although the center passed nearly over that city. The following extract from Mr. H. B. Boyer's narrative will complete the picture of this dramatic event:

> In point of violence the storm that swept over Savannah and contiguous territory on August 27 and 28 was the worst in the history of the local station of the Weather Bureau, the wind attaining a maximum (5 minute) velocity of 88 miles an hour shortly after 3 a. m. on August 28, with an extreme (1 mile) velocity of 96 miles an hour at 3.08 a. m. during one of the terrific gusts.

During the early morning of the 27th the sky had been overcast with cirro-stratus clouds moving from the northeast, the wind was northwest, about 20 miles an hour, and the pressure was 29.91 and slowly falling. The barometer began to fall rapidly about 10 a. m., the wind freshened, and lower clouds began to appear. Light rain fell from 2.15 to 2.58 p. m. The wind at 2.20 p. m. abruptly dropped from a velocity of 38 miles an hour to merely a fresh breeze, and coincident with this the barometer began to rise until the rain ended, then resuming its rapid fall. Conditions now became more threatening. The barometer at 8 p. m. was 29.71 inches and began to fall with extreme rapidity. The wind reached 62 miles an hour at 11.40 p. m., still blowing from the northwest with strong gusts, and at midnight the pressure registered 29.50 inches. The wind attained a velocity of 66 miles an hour at 12.05 a. m. August 28, 74 miles at 1.40 a. m., 78 at 2.45 a. m., and between 3.05 and 3.10 a. m. it reached its maximum force of 88 miles an hour from the northwest. From 3 a. m. to 6.05 a. m. the wind maintained a velocity ranging between 80 and 90 miles an hour from the northwest, accompanied by light rain, which set in about 2. a. m. At 8 a. m. the lowest pressure, 29.02 inches, was recorded, the wind diminished with astonishing quickness, and from 8.10 to 10.10 a. m. the vortex of the storm passed practically over Savannah, the wind dying down to 20 miles an hour and shifting to south about 10 a. m. Immediately after the shift of the wind its velocity rapidly increased and the rainfall became heavier. The highest velocity attained after the passage of the center was 64 miles an hour at 11.30 a. m. and at 12.05 p. m. Throughout the afternoon of the 28th the rain fell incessantly and the weather continued wild and threatening. The rain ceased about 1.45 a. m. of the 29th, and the wind fell below the verifying velocity of 36 miles at 2.10 a. m.

Considering the severity of the storm it is remarkable that the damage in the city of Savannah and contiguous territory was not larger. No lives were lost, and while the aggregate property loss was large, the damage done was mostly of minor nature. There was scarcely a house in the city that escaped damage of some sort. The streets were littered with trees and fences, and the telegraph, telephone, street railway and electric light companies suffered severely. But singular to relate, there was little or no unroofing of dwellings. Small craft in the river and at nearby resorts suffered greatly. That the storm was not more destructive on the water front was due to the fact that the wind was westerly and southerly and not at any time from the east. The hotel and residences on Tybee Island were greatly damaged.

All but one of the large vessels that encountered the storm, the steamships *Cretan* of the Merchants & Miners' Transportation Co., the Clyde liner *Apache*, the *City of Montgomery*, and the *City of Savannah* weathered the storm and arrived in port safely. The steamship *Lexington* was driven ashore near the mouth of the Edisto River on the north side of the storm center, where the winds were from the east. The passengers and members of the crew were all saved. Mr. Boyer states that this vessel put to sea in the face of the warnings telephoned to the agent's office at the dock fully three-quarters of an hour before she sailed and that the vessel passed in plain view of the hurricane signal displayed over the local office of the Weather Bureau and at the display station at Tybee Island. Considerable damage to property occurred at Beaufort and Port Royal, S. C., but no lives were lost. Subsequent heavy rains caused great damage to crops in the coastal region of Georgia.

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THE EXCESSIVE RAINFALL AT ST. GEORGE, GA., ON AUGUST 28–29, 1911.

A remarkably heavy rainfall of 18 inches in about 17 hours occurred at St. George, Ga., in the extreme southeastern corner of the State, on the afternoon and night of August 28, which is worthy of note. Mr. A. N. Lund, the very reliable cooperative observer at that place, states that the rain began at 2 p. m., but that the greater quantity of the water fell between 8 and 8.30 p. m., 28th, continuing lightly during the early morning of the 29th, and was measured at 7 a. m. The measurement is believed to have been correctly made. After taking out the inner tube of the rain gauge, which was full, giving 2 inches of precipitation, the water in the overflow cylinder measured 16 inches in depth, or a total of 18 inches for the storm. Mr. Lund says:

> The rainfall was something extraordinary. This is a flat, low country, and the water came up to the level of the piney woods deep enough to float large logs which were shifted about by the action of the wind. I was driven out of bed at 10.30 p. m. by the rain blowing under the shingles, and looking out saw that the surrounding country was one vast sea of water, without land in sight as far as one could see. In the morning our garden fence was drifted full of ties from the nearby railroad track, where they had been piled for shipment. At a place where a small gulley under the track had existed, the track was washed out for a distance of 30 feet. The gauge stood in an open space free from obstruction and had not been tampered with.

The maximum 24-hour fall on record at Atlanta, Ga., period 1879 to 1911, is 7.36 inches on March 29, 1886. On July 23, 1898, 4.30 inches fell in 51 minutes. The most remarkable rainfall in one day recorded in the United States is 21.4 inches at Alexandria, La., June 15–16, 1886. Another remarkable record is: Fort Clark, Tex., 18 inches on June 14–15, 1899, in 21 hours and 30 minutes. These rains can not compare, however, with the extraordinary downpours that occur in the Tropics.

TABLE 1.—*Climatological data for August, 1911. District No. 2, South Atlantic and east Gulf States.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Virginia.																				
Arvonia	Buckingham	350	7	77.2	+ 2.0	98	11†	51	22	36	7.92	+ 2.90	2.40	0	13	11	18	2	sw.	Rev. Plummer F. Jones.
Ashland	Hanover	221	20	76.2	+ 0.4	95	11	54	22	28	10.28	+ 5.95	2.10	0	13	7	19	5	s.	E. L. C. Scott.
Bedford City	Bedford	947	1	77.6	.....	98	11	55	22	34	4.87	.....	1.12	0	14	9	21	1	se.	E. H. Taylor.
Buchanan	Botetourt	820	7	.....	.....	.....	.....	.....	.....	.....	5.48	+ 1.58	1.76	0	11	.....	.....	.....	.....	D. D. Booze.
Callaville	Brunswick	250	17	77.8	+ 1.9	96	9†	55	22	31	8.68	+ 3.43	1.76	0	13	15	12	4	e.	F. M. Gage.
Cape Henry	Princess Anne	20	37	78.4	+ 1.5	96	17	67	21	24	3.19	− 2.91	1.81	0	10	17	10	4	s.	U. S. Weather Bureau.
Catawba	Roanoke	1,760	1	72.6	.....	91	11†	52	22	29	6.56	.....	1.70	0	12	18	10	3	w.	State B. of H. Sanitarium.
Charlottesville	Albemarle	800	22	77.0	+ 2.7	97	11	57	22†	27	7.01	+ 1.13	1.91	0	16	11	10	10	sw.	Leander McCormick Obs.
Clarksville	Mecklenburg	.....	17	.....	.....	.....	.....	.....	.....	.....	5.41	− 0.29	1.06	0	9	.....	.....	.....	.....	J. A. Ligon.
Columbia	Fluvanna	246	13	74.1	− 1.7	95	11†	48	22	37	10.15	+ 5.60	2.20	0	13	12	6	13	ne.	Chesapeake & Ohio R. R.
Covesville	Albemarle	.....	1	74.3	.....	97	17	51	22	32	6.44	.....	2.00	0	11	14	10	7	w.	F. H. Cole.
Danville	Pittsylvania	413	11	.....	.....	.....	.....	.....	.....	.....	5.43	+ 0.46	1.12	0	9	.....	.....	.....	.....	C. G. Watkins.
Diamond Springs	Princess Anne	25	1	78.8	.....	96	17	61	21	26	4.69	.....	1.49	0	12	8	13	10	.....	Va. Truck Experiment Sta.
Hampton	Elizabeth City	5	28	79.8	+ 2.7	94	12†	65	21	23	4.38	− 0.61	1.59	0	9	21	0	10	e.	Normal & Agricultural Inst
Hot Springs	Bath	2,195	19	68.7	0.0	91	11	43	20	38	7.97	+ 4.62	2.20	0	14	18	8	5	.....	F. M. Terry.
Ivor	Southampton	87	2	78.0	.....	96	11†	55	22	36	5.45	.....	1.90	0	11	.....	.....	.....	.....	N. & W. Ry. Expt. Farm.
Lassiter	Goochland	100	1	.....	.....	.....	.....	.....	.....	.....	6.51	.....	2.40	0	9	22	4	5	.....	T. J. Davis.
Lexington	Rockbridge	1,060	34	75.8	+ 2.6	100	11	54	21†	41	5.91	+ 2.51	1.30	0	16	19	7	5	.....	Virginia Military Institute.
Lynchburg	Campbell	685	40	76.8	+ 2.0	98	11	56	22	34	5.73	+ 1.48	1.86	0	14	11	17	3	n.	U. S. Weather Bureau.
New Castle	Craig	1,300	2	.....	.....	.....	.....	.....	.....	.....	4.76	.....	1.31	0	8	.....	.....	.....	.....	Miss J. L. Martin.
Newport News	Warwick	55	8	80.2	.....	96	9	65	21	26	5.44	.....	1.29	0	11	11	13	7	se.	C. W. Ashby.
Norfolk	Norfolk	91	41	78.8	+ 2.1	94	17	66	31	23	5.93	− 0.04	2.15	0	11	13	14	4	s.	U. S. Weather Bureau.
Petersburg	Dinwiddie	60	24	78.6	+ 1.7	96	3†	58	22	30	4.97	+ 0.13	1.70	0	10	19	2	10	w.	Central State Hospital.
Randolph	Charlotte	334	7	.....	.....	.....	.....	.....	.....	.....	7.23	.....	3.00	0	6	.....	.....	.....	.....	H. G. Holt.
Richmond	Henrico	144	32	77.6	+ 0.1	97	17	58	22	28	7.26	+ 2.85	2.03	0	14	11	15	5	s.	U. S. Weather Bureau.
Rocky Mount	Franklin	1,150	17	76.2	+ 1.3	99	11	51	22	41	7.82	+ 1.92	1.60	0	11	.....	.....	.....	.....	G. W. B. Hale.
Saxe	Charlotte	350	8	79.6	.....	98	11	57	21	33	7.10	.....	2.25	0	6	20	4	7	s.	State Experiment Farm.
Spottsville (near)	Surry	15	23	77.7	+ 2.6	96	11	55	22	32	5.09	− 0.60	1.21	0	12	13	11	7	sw.	B. W. Jones.
Williamsburg	James City	70	20	77.3	+ 2.6	96	11	56	22	32	3.85	− 1.14	1.55	0	9	21	7	3	se.	Eastern State Hospital.
North Carolina.																				
Albemarle	Stanly	700	....	79.1	.....	100	9†	56	23	38	9.28	.....	2.46	0	19	14	15	2	sw.	W. J. Harris.
Beaufort	Carteret	10	10	79.9	+ 0.1	93	14	67	20	20	4.73	− 1.34	1.45	0	13	18	5	8	sw.	H. D. Aller.
Belhaven	Beaufort	4	2	80.9	.....	93	1	64	22	26	1.88	.....	1.02	0	5	10	14	7	s.	A. L. Bell.
Caroleen	Rutherford	806	11	78.8	+ 1.3	97	9†	59	22	31	6.02	− 1.52	1.33	0	14	9	21	1	sw.	S. B. Tanner.
Chalybeate Springs	Harnett	500	5	79.0	.....	100	17	60	22	38	5.21	.....	1.43	0	11	21	8	2	sw.	J. A. Smith.
Charlotte	Mecklenburg	773	35	79.0	+ 2.5	97	9	62	22	28	6.20	+ 0.65	1.66	0	13	10	13	8	se.	U. S. Weather Bureau.
Chimney Rock	Rutherford	1,150	1	75.2	.....	94	9†	58	20	32	8.68	.....	2.06	0	14	14	10	7	w.	J. M. Flack.
Durham (near)	Durham	406	2	.....	.....	.....	.....	.....	.....	.....	8.02	.....	2.94	0	12	.....	.....	.....	.....	J. H. Michie.
Eagletown	Northampton	66	6	78.8	.....	94	17	60	22	27	8.90	.....	2.30	0	14	17	12	2	sw.	J. T. Elliott.
Edenton	Chowan	30	17	80.3	+ 2.0	95	11	61	22	26	4.03	− 1.95	2.00	0	7	16	8	7	s.	E. R. Conger.
Elizabethtown	Bladen	60	.....	.....	.....	.....	.....	.....	.....	.....	7.26	.....	2.20	0	13	.....	.....	.....	.....	J. W. Hall, jr.
Enfield (near)	Halifax	99	.....	.....	.....	.....	.....	.....	.....	.....	5.63	.....	1.90	0	8	.....	.....	.....	.....	T. S. Inborden.
Fayetteville	Cumberland	170	24	81.2	+ 3.5	100	13†	62	22	30	6.76	− 0.01	2.14	0	15	18	6	7	s.	Frank Glover.
Goldsboro	Wayne	102	41	78.8	+ 0.5	95	12	62	22	28	3.53	− 3.44	1.93	0	10	.....	.....	.....	s.	Mrs. N. B. Taylor.
Graham	Alamance	656	9	.....	.....	.....	.....	.....	.....	.....	8.45	.....	2.90	0	13	.....	.....	.....	.....	Dr. W. R. Goley.
Greensboro	Guilford	843	30	76.9	+ 0.3	99	17	58	22†	34	5.79	+ 0.45	1.75	0	9	.....	.....	.....	sw.	A. H. Horry.
Greenville	Pitt	75	18	.....	.....	.....	.....	.....	.....	.....	3.33	− 3.69	.83	0	14	.....	.....	.....	.....	R. M. Hearne.
Hatteras	Dare	11	37	79.6	+ 1.4	91	16	63	21	15	3.61	− 2.23	2.36	0	10	18	12	1	sw.	U. S. Weather Bureau.
Henderson	Vance	508	18	77.4	+ 0.2	98	10	56	22	26	7.97	+ 1.72	1.55	0	14	11	17	3	se.	Enoch Powell.
Kings Mountain (near)	Gaston	952	....	80.6	.....	.....	.....	56	23†	41	3.47	.....	1.45	0	10	0	16	15	w.	Rev. C. J. Strang.
Kinston	Lenoir	46	13	80.6	+ 1.1	99	12†	62	20	33	4.64	− 1.60	1.07	0	15	17	10	4	sw.	H. C. V. Peebles.
Lenoir	Caldwell	1,186	38	76.8	+ 3.1	99	17	50	20	37	5.45	− 0.52	1.91	0	11	28	2	1	s.	G. M. Goforth.
Lincolnton	Lincoln	994	6	77.4	.....	99	17	57	23	37	2.83	.....	.64	0	11	0	31	0	nw.	S. P. Houser.
Louisburg	Franklin	375	20	78.2	+ 1.1	93	9†	58	22	28	5.67	− 0.03	1.35	0	8	18	10	3	w.	T. B. Wilder.
Lumberton	Robeson	102	28	80.3	+ 1.4	100	17	62	22	31	10.06	+ 3.81	2.21	0	19	.....	.....	.....	ne.	B. M. Davis.
Manteo	Dare	12	6	78.8	.....	98	12	60	20	27	4.25	.....	1.39	0	9	16	10	5	sw.	U. S. Weather Bureau.
Marion	McDowell	1,425	19	75.4	+ 0.4	96	17	55	20	32	5.16	− 1.05	1.46	0	17	11	18	2	w.	Sergt. Thos. McGuire.
Middletown	Hyde	4	....	78.6[a]	.....	94	12	62	21	30	5.33	.....	1.26	0	11	15	9	7	s.	J. S. Mann.
Moncure	Chatham	145	17	78.9[a]	+ 1.3	99	17	55	21	35	7.57	+ 1.44	2.23	0	12	16	5	10	sw.	B. J. Utley.
Monroe	Union	586	17	78.8	+ 2.1	100	17	55	23	36	5.64	− 1.39	1.16	0	13	18	7	6	sw.	T. A. Ashcraft.
Morganton	Burke	1,135	24	76.6	+ 1.8	97	17	54	20	33	6.95	+ 1.75	2.26	0	13	22	4	5	ne.	J. B. P. Massey.
Mount Airy	Surry	1,048	23	77.2	+ 3.4	96	8†	54	20†	38	6.09	− 0.01	1.65	0	15	20	7	4	ne.	Prof. A. H. Merritt.
Mount Holly	Gaston	616	14	.....	.....	.....	.....	.....	.....	.....	4.76	− 1.22	1.96	0	13	.....	.....	.....	.....	J. W. Holland.
Nashville	Nash	190	7	79.4	.....	98	12	58	22	32	3.66	.....	.80	0	9	14	12	5	s.	J. B. Boddie.
Neuse	Wake	266	.....	.....	.....	.....	.....	.....	.....	.....	8.05	.....	2.17	0	11	.....	.....	.....	.....	Gaston H. Mooneyham.
Newbern	Craven	12	29	78.0	− 0.2	96	12	61	22	31	5.32	− 2.59	1.72	0	17	.....	.....	.....	se.	J. B. Hill.
Pinehurst §	Moore	650	7	79.5	.....	98	3	62	23	31	10.64	.....	2.92	0	12	16	5	10	s.	General office.
Raleigh	Wake	390	40	78.8	+ 2.0	96	17	60	22	25	7.36	+ 1.46	2.02	0	11	9	16	6	sw.	U. S. Weather Bureau.
Ramseur	Randolph	442	4	79.2	.....	100	9	54	22†	41	11.17	.....	2.50	0	12	15	15	1	sw.	A. H. York.
Randleman	....do	810	6	.....	.....	.....	.....	.....	.....	.....	5.15	.....	2.00	0	8	.....	.....	.....	.....	J. R. Walton.
Reidsville	Rockingham	828	12	77.0[m]	+ 1.3	98	23	56	22	34	7.85	+ 2.35	2.25	0	13	.....	.....	.....	.....	E. M. Redd.
Rock House	Macon	3,100	19	69.0	− 2.1	83	9	54	22	20	13.32	+ 3.86	4.77	0	20	8	15	8	s.	B. C. Hawkins.
Rocky Mount	Nash	105	.....	.....	.....	.....	.....	.....	.....	.....	5.89	.....	2.50	0	9	.....	.....	.....	.....	G. P. Womble.
Roxboro	Person	600	12	77.2	+ 0.9	96	17	55	20	34	9.68	+ 5.63	2.35	0	11	16	2	13	s.	N. Lunsford.
Salem	Forsyth	1,000	16	77.6	+ 1.0	98	17	55	23	36	5.30	− 0.21	1.35	0	9	.....	.....	.....	.....	Rev. H. E. Rondthaler.
Salisbury	Rowan	760	27	79.7	+ 2.2	102	9	59	23	36	6.68	+ 1.36	2.48	0	9	10	5	16	sw.	Miss Thelma Wilkinson.
Saxon	Stokes	900	19	75.4	− 0.1	95	9†	50	19	38	7.10	+ 1.93	1.65	0	14	13	8	10	sw.	R. P. McAnally.
Scotland Neck	Halifax	80	7	76.2[e]	.....	91	12†	58	22	28	5.68	.....	.80	0	14	.....	.....	.....	.....	J. Y. Savage.
Selma	Johnston	225	21	80.6	+ 2.4	101	13	60	22	34	5.85	− 0.71	2.10	0	10	.....	.....	.....	.....	Dr. R. J. Noble.
Settle	Iredell	700	15	77.3	+ 0.9	97	9	54	23	38	3.00	− 2.38	.77	0	7	13	12	6	sw.	C. H. Smith.
Sloan	Duplin	50	18	79.4	+ 1.4	98	17	62	20	29	5.90	− 1.30	1.03	0	17	12	4	15	s.	D. M. Sholar.
Smithfield	Johnston	151	.....	.....	.....	.....	.....	.....	.....	.....	4.45	.....	.95	0	11	.....	.....	.....	.....	Edwin S. Sanders.
Snow Hill	Greene	80	6	79.0[a]	.....	97	12†	62	8†	31	7.37	.....	2.11	0	14	6	20	5	s.	L. J. H. Mewborn.
Southern Pines	Moore	519	21	78.7	+ 0.1	97	17	59	22	26	6.22	− 1.07	1.25	0	12	17	8	6	se.	Mrs. P. H. Beck.
Southport	Brunswick	18	56	80.3	+ 0.6	93	16	64	22	21	7.46	+ 1.83	2.34	0	8	11	14	6	sw.	Mrs. C. E. Taylor.
Statesville	Iredell	950	23	75.0	− 0.5	94	19	55	23	29	3.54	− 2.02	2.10	0	5	9	15	7	sw.	D. Matt Thompson.
Tarboro	Edgecombe	50	26	80.8	+ 2.2	98	12†	61	22	30	5.16	− 1.57	1.09	0	13	.....	.....	.....	.....	E. V. Zoeller.
Weldon	Halifax	81	39	79.7	+ 2.5	101	17	59	22	36	4.10	− 1.35	1.03	0	11	.....	.....	.....	s.	H. S. S. Cooper.
Willard	Pender	51	3	78.6	.....	99	7	61	10	30	4.98	.....	.99	0	14	12	13	6	s.	J. H. Jefferies.
Wilmington	New Hanover	52	40	79.1	+ 1.5	94	17	65	22	23	13.85	+ 7.34	5.51	0	12	8	16	7	s.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for August, 1911. District No. 2*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
South Carolina.																				
Aiken	Aiken	565	27	80.8	+ 1.2	100	13†	6[illegible]	21	29	3.32	− 2.91	1.50	0	4	15	11	5	sw.	Dr. H. T. Hall.
Allendale	Barnwell	186	23	80.0	− 0.4	100	17	6[illegible]	21†	30	5.59	− 0.47	1.15	0	9	9	13	9	.....	A. R. Hiers.
Anderson	Anderson	764	10	80.0	+ 2.3	101	9	[illegible]	23	29	1.76	− 4.32	0.81	0	11	20	0	11	w.	H. H. Russell.
Batesburg	Lexington	656	23	79.1	+ 0.3	98	17	6[illegible]	21†	27	4.20	− 1.42	1.54	0	8	15	6	10	n.	E. J. Hite.
Beaufort	Beaufort	20	25	79.6	− 2.0	90	17	[illegible]	21	20	4.27	− 3.10	2.00	0	12	4	26	1	se.	Miss Lillian H. Rice.
Blackville	Barnwell	296	22	81.4	+ 0.9	99	5†	[illegible]	20	30	7.95	+ 2.07	2.15	0	16	10	9	12	sw.	Miss M. E. Lange.
Blairs	Fairfield	293	6	.....	.....	.....	.....	.....	.....	.....	4.58	.....	1.44	0	14	16	8	7	s.	John R. Ragsdale.
Bowman	Orangeburg	160	10	78.8	− 0.7	98	18	[illegible]	10	34	5.84	− 0.35	1.47	0	12	17	9	3	sw.	B. O. Evans.
Calhoun Falls	Abbeville	508	18	.....	.....	.....	.....	.....	.....	.....	2.04	− 3.97	0.52	0	7	17	0	13	e.	L. M. Parker.
Camden	Kershaw	222	45	82.2	.....	99	19	[illegible]	23	30	11.30	+ 5.83	2.36	0	11	22	4	5	se.	W. C. Brown.
Catawba	York	562	6	.....	.....	.....	.....	.....	.....	.....	4.73	.....	1.54	0	10	22	2	7	sw.	Jas. C. Faris.
Chappells	Newberry	402	6	.....	.....	.....	.....	.....	.....	.....	3.35	.....	2.01	0	4	13	1	17	w.	W. R. Zimmerman.
Charleston	Charleston	48	41	80.8	+ 0.5	94	16	[illegible]	22	18	7.52	+ 0.55	2.89	0	9	9	20	2	se.	U. S. Weather Bureau.
Cheraw	Chesterfield	144	23	78.8	+ 0.1	100	17	[illegible]	22	30	9.12	+ 2.53	2.10	0	14	17	7	7	w.	J. H. Powe.
Clemson College	Oconee	850	20	77.3	− 0.8	91	9	[illegible]	23	22	5.16	− 0.55	1.36	0	8	18	10	3	s.	Prof. John N. Hook.
Columbia	Richland	351	25	79.8	+ 0.3	96	17	[illegible]	21	26	6.03	− 0.75	1.33	0	16	3	18	10	sw.	U. S. Weather Bureau.
Conway	Horry	25	19	79.8	+ 0.7	97	18	[illegible]	3	24	9.63	+ 2.69	3.12	0	10	13	0	18	sw.	P. C. Quattlebaum.
Darlington	Darlington	175	16	79.7	.....	102	14	[illegible]	22	40	4.57	− 1.02	1.15	0	13	.....	.....	.....	.....	D. C. McCall.
Dillon	Dillon	100	7	80.6	+ 1.0	104	17	[illegible]	22	34	5.92	+ 0.25	2.14	0	14	.....	.....	.....	.....	A. E. Rowell.
Effingham	Florence	106	19	.....	.....	.....	.....	.....	.....	.....	5.65	− 1.23	1.50	0	10	22	0	9	sw.	H. B. McCall.
Ferguson	Berkeley	51	3	79.8	+ 1.9	96	14†	[illegible]	3	26	5.08	− 2.49	1.15	0	13	19	3	9	sw.	Dr. Jas. R. Desportes.
Florence	Florence	136	23	82.3	+ 1.9	103	12†	[illegible]	22	31	8.82	+ 3.14	3.10	0	13	14	9	8	ne.	H. K. Gilbert.
Georgetown	Georgetown	12	18	81.3	+ 1.1	98	12	[illegible]	21	27	13.01	+ 5.98	3.00	0	14	3	22	6	ne.	A. P. Hazard.
Greenville	Greenville	989	19	77.2	+ 1.5	96	17	[illegible]	23	34	5.71	− 0.76	1.30	0	14	19	5	7	e.	Spartan Goodlette.
Greenwood	Greenwood	671	23	79.7	+ 0.8	99	9†	[illegible]	21†	29	4.17	− 1.48	0.99	0	12	22	0	9	w.	M. M. Calhoun.
Heath Springs	Lancaster	568	10	81.0	.....	99	13†	[illegible]	23	30	9.22	.....	1.82	0	14	21	7	3	sw.	J. A. Weaner.
Jacksonboro	Colleton	13	3	79.6	.....	94	15†	[illegible]	22	22	5.75	.....	1.22	0	13	9	12	10	se.	W. E. Haskell, jr.
Kingstree	Williamsburg	54	23	79.8	+ 2.1	100	18	[illegible]	22	30	8.60	+ 2.24	2.44	0	10	18	4	9	se.	A. O. Matthews.
Liberty	Pickens	900	17	78.8	+ 1.2	98	17	[illegible]	23	32	4.61	− 2.47	1.40	0	16	14	12	5	sw.	John T. Boggs.
Little Mountain	Newberry	711	18	78.8	− 0.8	99	9	[illegible]	15	30	5.52	− 0.08	1.18	0	15	15	4	12	s.	J. W. Sease, M. D.
Meriwether	Edgefield	.....	2	80.4	.....	98	9	[illegible]	22†	32	3.59	.....	1.36	0	8	.....	.....	.....	.....	Wm. S. Middleton.
Newberry	Newberry	502	7	80.6	+ 1.5	99	9	[illegible]	21†	33	6.01	+ 0.34	1.11	0	17	4	20	7	sw.	W. G. Peterson.
Pelzer	Anderson	873	6	.....	.....	.....	.....	.....	.....	.....	2.98	.....	0.70	0	8	21	1	9	w.	John M. Ward.
Pinopolis	Berkeley	55	18	.....	.....	.....	.....	.....	.....	.....	9.36	+ 4.00	1.70	0	15	.....	.....	.....	.....	Miss E. P. Ravenel.
St. George	Dorchester	109	23	82.5	+ 2.7	100	17	[illegible]	22	29	8.02	+ 1.42	2.50	0	13	25	0	6	.....	G. F. Lewis.
St. Matthews	Calhoun	209	23	79.6	+ 0.1	94	18	[illegible]	22	28	4.16	− 1.77	1.68	0	12	16	0	15	.....	J. S. Wannamaker.
Saluda	Saluda	530	9	80.2	.....	100	9†	[illegible]	23	33	4.34	.....	0.90	0	10	16	14	1	sw.	Mrs. F. V. J. Maxwell.
Santuc	Union	512	16	81.8	+ 3.7	103	8†	[illegible]	23	36	4.96	− 0.77	2.09	0	13	3	19	9	s.	E. W. Jeter.
Smith Mills	Williamsburg	62	16	.....	.....	.....	.....	.....	.....	.....	8.18	+ 0.86	1.79	0	12	18	0	13	e.	W. H. Walker.
Society Hill	Darlington	192	20	79.0	+ 0.6	95	17	[illegible]	21	25	8.96	+ 2.79	3.02	0	11	18	4	9	sw.	Maj. J. J. Lucas.
Spartanburg	Spartanburg	875	20	78.8	+ 0.4	98	9†	[illegible]	23	35	2.81	− 3.52	1.00	0	9	14	0	17	.....	F. P. Robinson.
Summerville	Dorchester	75	14	79.8	+ 0.7	96	17	[illegible]	22	29	8.51	+ 0.13	1.73	0	20	0	28	3	sw.	Miss E. H. Gadsden.
Trenton	Edgefield	620	18	80.4	+ 0.6	99	9	[illegible]	23	31	4.99	− 1.82	1.00	0	15	4	23	4	s.	C. A. Long.
Walterboro	Colleton	69	7	82.0	.....	101	19	[illegible]	26	35	6.77	.....	2.00	0	15	14	10	7	.....	J. A. Westerberg.
Winnsboro	Fairfield	545	21	76.4	− 1.8	99	17	[illegible]	28†	24	5.55	− 0.49	2.15	0	7	5	21	5	se.	J. W. Seigler.
Winthrop College	York	690	12	80.4	+ 1.9	98	17	[illegible]	22	28	5.17	− 1.88	1.65	0	10	15	12	4	.....	E. R. Rivers.
Yemassee	Hampton	23	16	79.4	− 1.1	95	9	[illegible]	21†	29	7.02	+ 0.24	2.00	0	11	22	2	5	.....	J. G. Hutson.
Georgia.																				
Abbeville	Wilcox	.....	8	.....	.....	.....	.....	.....	.....	.....	9.27	.....	3.06	0	15	10	3	18	s.	W. H. Calhoun.
Adairsville	Bartow	772	19	77.5[d]	− 0.3	95[d]	9†	[illegible][d]	21†	30	3.14	− 1.21	1.01	0	8	8[d]	16[d]	3[d]	.....	Dr. J. P. Bowdoin.
Albany	Dougherty	230	25	82.0	0.0	97	6†	[illegible]	22†	25	6.16	+ 0.06	1.09	0	16	20	5	6	ne.	George C. Brosnan.
Allapaha	Berrien	293	22	79.3[1]	− 1.2	95	6†	[illegible]	.....	.....	8.90	+ 3.11	2.01	0	14	2	23	6	ne.	James T. Austin.
Americus	Sumter	362	28	79.6	− 1.4	94	7†	[illegible]	23	28	7.40	+ 2.28	1.95	0	7	18	5	8	ne.	F. P. Harrold.
Athens	Clarke	694	34	78.8	+ 1.6	96	9	[illegible]	22	26	8.52	+ 3.30	2.07	0	14	17	2	12	e.	C. D. Cox.
Atlanta	Fulton	1,218	46	77.2	0.0	96	9	[illegible]	21	23	1.99	− 2.48	0.82	0	11	9	10	12	e.	U. S. Weather Bureau.
Augusta	Richmond	180	45	80.4	+ 0.4	96	17	[illegible]	21	25	4.27	− 1.08	1.40	0	13	5	17	9	se.	Do.
Bainbridge	Decatur	110	19	81.5	+ 0.2	100	7	[illegible]	22†	30	7.43	+ 1.69	1.45	0	17	22	0	9	sw.	Mrs. C. O. Wimberley.
Barnesville	Pike	875	2	78.7	.....	99	6	[illegible]	1†	29	3.76	.....	1.15	0	14	9	15	7	ne.	C. W. Mobley.
Blakely	Early	300	20	83.4	+ 2.3	105	7	[illegible]	22	34	4.83	− 1.58	1.40	0	10	3	26	2	sw.	Ralph M. Hobbs.
Butler	Taylor	650	10	.....	.....	.....	.....	.....	.....	.....	4.16	− 2.83	2.00	0	7	20	2	9	s.	Mrs. Mamie F. Wallace.
Camak	Warren	613	19	79.8	+ 0.5	98	10	[illegible]	22†	35	10.56	+ 6.32	2.90	0	11	12	6	13	.....	J. A. Chapman.
Canton	Cherokee	894	20	.....	.....	.....	.....	.....	.....	.....	5.33	+ 0.52	2.78	0	7	16	2	13	.....	G. W. Evans.
Carlton	Madison	557	12	.....	.....	.....	.....	.....	.....	.....	4.24	− 1.72	0.95	0	11	20	2	9	n.	M. C. Power.
Clayton	Rabun	2,100	17	73.6	− 1.0	92	9	[illegible]	23	29	7.92	+ 0.63	2.00	0	15	18	7	6	w.	A. J. Duncan
Columbus	Muscogee	262	23	81.4	+ 0.6	97	7†	[illegible]	3	25	3.73	− 1.28	1.07	0	12	18	2	11	ne.	A. J. Land.
Covington	Newton	800	19	.....	.....	.....	.....	.....	.....	.....	5.05	− 0.43	1.25	0	12	17	5	9	s.	Mrs. Sarah E. Cruse.
Cuthbert	Randolph	446	11	80.6[1]	+ 0.4	96[1]	26	[illegible][1]	21	26	4.40	.....	1.75	0	8	.....	.....	.....	.....	Prof. W. McMichael.
Dahlonega	Lumpkin	1,519	21	76.0	+ 1.3	95	9	[illegible]	23	2[illegible]	2.78	− 3.52	0.56	0	12	8	20	3	se.	Prof. B. P. Gaillard.
Diamond	Gilmer	2,020	21	74.8[a]	+ 1.7	92[a]	16	[illegible][a]	21†	31	2.68	− 4.10	0.82	0	11	11	14	6	.....	R. A. Kimzey.
Dublin	Laurens	452	17	.....	.....	.....	.....	.....	.....	.....	5.76	+ 0.58	1.87	0	8	18	3	10	se.	Mrs. M. E. Martin.
Eastman	Dodge	361	19	81.1	− 0.4	98	9	[illegible]	22	26	6.64	+ 1.72	2.58	0	17	12	4	15	w.	Miss Annie Bohannon.
Eatonton	Putnam	.....	8	.....	.....	.....	.....	.....	.....	.....	6.27	.....	1.43	0	14	.....	.....	.....	.....	Prof. W. C. Wright.
Elberton	Elbert	710	20	79.6	+ 0.9	98	9†	[illegible]	22	29	3.50	− 2.11	0.53	0	11	20	9	2	w.	H. A. Roebuck.
Experiment	Spalding	946	11	78.4	0.0	92	9	[illegible]	21	19	4.13	− 0.57	1.35	0	8	2	26	3	.....	Martin V. Calvin.
Fort Gaines	Clay	166	24	81.2	+ 0.6	99	6†	[illegible]	23	28	7.21	+ 1.52	1.80	0	12	21	0	10	s.	Miss Eva T. Graham.
Gainesville	Hall	1,254	34	76.8	− 1.3	96	9†	[illegible]	21†	30	2.62	− 3.20	0.70	0	10	7	14	10	e.	W. C. Walker.
Gillsville	....do	1,052	21	78.2	+ 1.1	96	14	[illegible]	22	34	2.90	− 2.47	1.62	0	7	17	11	3	w.	J. W. Casey.
Glennville	Tattnall	.....	6	80.6	.....	95	3	[illegible]	22	24	8.55	.....	2.52	0	13	17	11	3	nw.	William C. Barnard.
Gore	Chattooga	.....	12	78.0	+ 0.9	98	9	[illegible]	21	34	1.71	− 3.29	0.56	0	11	18	6	7	s.	H. M. Ponder.
Greensboro	Greene	598	9	78.6	.....	96	8†	[illegible]	22	28	5.82	.....	2.08	0	10	13	6	12	e.	R. L. Caldwell.
Griffin	Spalding	975	22	77.7	− 0.5	92	9	[illegible]	21†	22	7.08	+ 1.54	2.58	0	13	17	1	13	ne.	V. P. Enloe.
Harrison	Washington	245	12	79.0	− 1.1	95	8†	[illegible]	22	28	4.23	− 1.85	1.75	0	10	17	6	8	e.	A. W. J. Wood.
Hartwell	Hart	838	2	79.9	.....	98	9†	[illegible]	23	29	3.31	.....	1.44	0	11	6	23	2	w.	W. B. McMullan.
Hawkinsville	Pulaski	235	16	.....	.....	98[a]	8	[illegible]	.....	.....	3.62	− 2.80	1.80	0	7	14	11	6	.....	R. H. Wood.
Helena	Telfair	260	4	79.8	.....	95	9	[illegible]	22	23	16.20	.....	4.06	0	19	0	9	22	ne.	James D. Smith.
Lisbon	Lincoln	.....	4	80.4	.....	100	9	[illegible]	22†	30	4.33	.....	0.94	0	16	2	13	16	se.	B. J. DuBose.
Lost Mountain	Cobb	.....	11	79.0	+ 0.7	96	12	[illegible]	3	29	1.78	− 3.05	0.77	0	6	2	29	0	w.	A. N. Mayes.
Louisville	Jefferson	259	19	80.2	+ 0.1	97	14	[illegible]	22	25	3.57	− 1.67	0.96	0	11	4	24	3	.....	J. C. Little.
Lumber City	Telfair	.....	2	.....	.....	.....	.....	.....	.....	.....	21.27	.....	9.37	0	20	15	8	8	e.	Walter A. Hilton.
Lumpkin	Stewart	650	17	81.8	+ 1.4	100	26†	[illegible]	22	32	4.73	− 0.78	1.33	0	8	4	26	1	w.	A. W. Latimer.
Macon	Bibb	370	33	80.0	− 0.2	94	8	[illegible]	21	22	4.15	− 0.41	0.98	0	17	8	12	11	s.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for August, 1911. District No. 2*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Georgia*—Continued.**																			
Marshallville	Macon	500	19	80.2	− 0.1	96	7†	63	21†	31	5.85	+ 0.92	1.10	0	13	5	17	9	w.	E. C. Bryan.
Milledgeville	Baldwin	276	23	80.2	+ 0.8	99	9	61	20	24	7.47	+ 2.45	2.18	0	14	19	6	6	s.	Prof. O. M. Cone.
Millen	Jenkins	158	24	81.0	0.0	98	2†	64	22	28	8.57	+ 3.60	2.40	0	13	17	2	12	se.	M. G. McComb.
Mineral Bluff	Fannin	.....	.....	74.9	.....	94	9	51	21	35	4.74	.....	1.35	0	13	5	24	2	n.	J. M. Clement.
Montezuma	Macon	292	6	.....	.....	.....	.....	.....	.....	.....	4.65	.....	1.28	0	11	17	8	6	e.	J. C. Collins.
Monticello	Jasper	800	16	79.2	0.0	96	9	62	22	28	5.98	+ 0.76	0.94	0	15	19	0	12	.....	Miss Maude C. Penn.
Newnan	Coweta	959	22	78.7	+ 0.3	96	9	62	21	27	1.90	− 3.55	0.50	0	10	17	1	13	e.	Mrs. Ida J. Milner.
Norcross	Gwinnett	1,078	.....	.....	.....	.....	.....	.....	.....	.....	1.86	.....	0.88	0	11	15	8	8	.....	W. O. Medlock.
Point Peter	Oglethorpe	1,000	22	78.6	+ 0.6	98	9	61	23	26	5.14	− 0.56	1.10	0	9	9	17	5	.....	C. M. Witcher.
Poulan	Worth	365	20	80.6	+ 0.5	98	7	64	24	29	8.02	+ 0.84	1.70	0	13	16	12	3	.....	Dr. J. F. Wilson.
Putnam	Marion	.....	11	79.9[g]	− 1.1	98[f]	26	.....	.....	33	4.05	− 0.30	0.70	0	8	7[e]	13[e]	6[e]	s.	Mrs. J. M. Collum.
Quitman	Brooks	173	25	79.2	− 1.7	94	26	66	22†	24	12.31	+ 5.90	3.70	0	20	23	0	8	ne.	A. B. Jones.
Ramhurst	Murray	1,353	18	76.1	− 0.8	89	8†	58	21	21	3.70	− 1.04	1.77	0	12	10	10	11	sw.	D. E. Humphreys.
Resaca	Gordon	657	17	.....	.....	.....	.....	.....	.....	.....	2.64	− 1.69	0.60	0	10	19	2	10	se.	D. A. Norton.
Rome	Floyd	576	55	79.2	+ 0.4	98	9†	60	21	31	4.03	+ 0.15	0.95	0	11	17	4	10	n.	W. M. Towers.
St. George	Charlton	.....	4	79.5	.....	94	6	64	9	28	24.17	.....	18.00	0	14	11	15	5	sw.	A. N. Lund.
St. Marys	Camden	20	19	80.4	− 0.4	99	17	68	22†	27	11.59	+ 6.34	8.34	0	11	3	20	8	se.	David C. Sterling.
Savannah	Chatham	65	61	80.0	− 0.7	94	17	66	21	22	5.77	− 2.05	2.95	0	15	3	18	10	s.	U. S. Weather Bureau.
Statesboro	Bulloch	253	11	81.4	0.0	100	9	65	22	30	6.33	+ 0.25	1.54	0	15	6	22	3	.....	W. C. Cromley.
Talbotton	Talbot	750	18	80.8[c]	+ 1.8	99[c]	7†	63[c]	21†	29	.....	.....	.....	0	...	9[c]	11[c]	8[c]	.....	Dr. E. L. Bardwell.
Tallapoosa	Haralson	1,150	12	77.5	− 0.4	96	9	59	21	30	4.21	− 0.35	1.14	0	12	11	9	11	ne.	Elmer C. Bishop.
Thomasville	Thomas	273	29	80.4	− 0.4	97	7	66	22	26	3.87	− 2.39	2.17	0	17	3	15	13	e.	U. S. Weather Bureau.
Tifton	Tift	370	.....	80.6[d]	.....	98[d]	7	66[d]	23	27	6.91	.....	1.44	0	13	.....	.....	.....	.....	K. C. Moore.
Toccoa	Stephens	1,050	26	76.6	+ 0.4	92	16†	61	23	25	7.10	+ 0.44	1.55	0	11	20	0	11	w.	Mrs. Alice N. Starke.
Valdosta	Lowndes	210	6	81.6	.....	100	26	65	22	29	16.20	.....	5.40	0	15	17	0	14	nw.	Miss Annie Twitty.
Valona	McIntosh	10	14	80.8[i]	+ 0.1	96[i]	10†	64[i]	2	29	9.00	+ 1.09	.....	0	...	.....	.....	.....	.....	J. M. Atwood.
Washington	Wilkes	630	23	79.7	+ 0.6	97	9†	63	22†	29	4.76	+ 0.48	0.95	0	10	17	6	8	ne.	Miss Ella B. Smith.
Waycross	Ware	131	22	80.9	− 0.7	97	6	66	22	27	8.20	+ 2.02	2.48	0	18	22	4	5	s.	Thomas Sasser.
Waynesboro	Burke	86	20	79.4	+ 0.3	97	16	60	22	30	5.84	+ 0.08	1.85	0	10	15	5	11	s.	Mrs. H. W. Blount.
West Point	Troup	620	22	79.8	− 0.4	99	9	64	21	25	4.02	− 1.29	1.05	0	12	15	3	13	n.	E. N. Dunn.
Woodbury	Meriwether	641	10	.....	.....	.....	.....	.....	.....	.....	4.87	− 0.20	1.95	0	13	18	4	9	.....	E. T. Riggins.
Florida.																				
Apalachicola§	Franklin	24	7	81.0	.....	93	27†	69	22	18	10.14	.....	2.80	0	11	4	20	7	se.	G. H. Whiteside.
Arcadia	De Soto	61	10	81.0	− 0.7	97	18	65	20	30	7.17	− 2.41	1.20	0	18	12	19	0	e.	C. S. Bushnell.
Archer	Alachua	92	26	79.8	− 1.4	95	13†	64	25	28	10.22	+ 2.66	1.28	0	15	.....	.....	.....	.....	R. B. Hodgson.
Avon Park	De Soto	150	13	81.2	− 0.6	96	17	67	20	27	3.93	− 3.62	0.90	0	15	9	13	9	.....	O. R. Thacher.
Bartow	Polk	115	23	80.7	− 0.8	98	19	65	20	32	7.87	+ 0.03	1.30	0	18	7	11	13	se.	Wm. Hood.
Blountstown	Calhoun	.....	2	81.8	.....	96	9†	64	21	27	6.96	.....	3.35	0	17	0	23	8	sw.	C. L. Hobbs.
Bradentown	Manatee	10	27	79.6	− 1.6	91	13	62	20	25	8.10	− 1.15	1.48	0	18	6	23	2	.....	H. H. Ten Broeck.
Brooksville	Hernando	126	18	80.8	0.0	95	24	65	22	25	7.67	− 1.88	3.26	0	12	13	12	6	w.	C. C. Peck.
Carrabelle	Franklin	10	12	81.7	+ 0.4	95	6†	65	20†	25	6.62	− 0.81	2.05	0	9	.....	.....	.....	.....	J. J. Blomquist.
Cedar Key	Levy	10	22	81.7	+ 0.1	93	9	69	22	18	11.15	+ 2.80	2.55	0	17	.....	.....	.....	w.	J. B. Lutterloh.
Clermont	Lake	105	18	82.3	− 0.4	100	18	66	22	28	7.43	− 0.55	2.25	0	12	10	16	5	sw.	S. S. Fesler.
De Funiak Springs	Walton	193	13	81.4[a]	+ 0.8	99[a]	7†	65[a]	23†	29	11.01	+ 1.06	2.90	0	13	.....	.....	.....	s.	R. W. Storrs.
De Land	Volusia	27	14	79.4	− 0.9	93	18	66	19†	26	7.28	.....	1.80	0	15	10	8	13	s.	O. B. Webster.
Eustis	Lake	56	20	82.1	− 0.1	96	11†	69	22†	25	7.76	+ 0.87	1.54	0	17	10	13	8	e.	C. T. Smith.
Federal Point	Putnam	5	19	80.2	− 0.8	94	7†	65	23	29	7.53	+ 0.23	1.92	0	18	4	22	5	sw.	E. S. Hubbard.
Fenholloway	Taylor	75	4	80.4	.....	98	7	60	24	28	15.29	.....	5.50	0	15	.....	.....	.....	.....	Miss E. Wigglesworth.
Fernandina	Nassau	10	18	81.2	+ 0.5	96	17	69	23	23	9.42	+ 3.40	7.60	0	11	17	8	6	se.	W. B. C. Duryee.
Fort Meade	Polk	125	22	81.4	+ 0.3	97	18†	64	20	30	7.08	− 2.32	1.65	0	16	13	10	8	nw.	G. L. Brodrick.
Fort Myers	Lee	12	39	80.4	− 0.7	91	18†	70	10†	18	11.19	+ 3.00	2.67	0	12	16	12	3	se.	Miss M. M. Gardner.
Fort Pierce	St. Lucie	6	10	80.6	0.0	95	20†	68	8†	26	3.40	− 3.03	1.25	0	10	25	5	1	se.	T. C. Nicholson.
Gainesville	Alachua	176	17	80.3	− 1.6	95[a]	7	68	22†	24	8.16	+ 1.23	1.25	0	17	13	10	8	se.	John Schnabel.
Grasmere §	Orange	175	13	80.4	− 1.3	95	25	66	22†	27	7.87	.....	1.25	0	16	17	11	3	.....	J. B. Escott.
Hilliard	Nassau	69	2	79.6	.....	94	6	65	24	25	17.39	.....	12.50	0	14	16	7	8	.....	B. A. Tibbits.
Homestead	Dade	5	1	80.8	.....	96	26†	64	5†	29	6.60	.....	1.70	0	17	15	16	0	se.	W. J. Krome.
Hypoluxo	Palm Beach	9	15	.....	.....	.....	.....	.....	.....	.....	5.12	+ 0.05	.....	0	...	.....	.....	.....	.....	G. A. Angevine.
Inverness	Citrus	43	11	80.2	− 0.6	92	13†	68	23	21	4.64	− 3.31	1.14	0	14	0	17	14	sw.	W. H. Miller.
Jacksonville	Duval	101	40	80.6	+ 0.5	92	7	69	23	20	10.16	+ 3.95	2.96	0	18	9	9	13	sw.	U. S. Weather Bureau.
Jasper	Hamilton	152	10	80.4	− 0.6	94	5†	66	22	25	15.35	+ 8.75	6.10	0	19	12	5	14	w.	Mrs. W. C. Caldwell.
Johnstown	Bradford	125	11	80.4	− 0.9	95	26	67	23	26	14.56	+ 6.21	3.75	0	19	10	17	4	.....	A. M. C. Brasch.
Key West	Monroe	14	40	82.0	− 1.8	90	6	70	13	17	7.89	− 3.20	1.78	0	13	9	15	7	ne.	U. S. Weather Bureau.
Kissimmee	Osceola	65	18	82.0	− 0.2	98	17†	66	22†	26	8.22	+ 0.91	2.46	0	12	10	11	10	sw.	J. A. Simpson.
Lake City	Columbia	210	26	79.4	− 0.6	94	27	67	22†	23	12.59	+ 6.09	8.00	0	17	11	17	3	se.	W. B. Knight.
Macclenny	Baker	125	14	79.2	− 2.6	94	6	63	4	24	17.73	+10.81	8.60	0	20	2	17	12	.....	Griffing Bros. Co.
Madison	Madison	200	11	80.6	− 0.9	98	25	67	6†	28	14.28	+ 7.39	3.02	0	19	13	2	16	se.	E. J. Vann.
Malabar	Brevard	24	17	80.2	− 1.7	97	19	64	21	31	8.00	+ 3.35	2.60	0	12	23	7	1	se.	J. F. Farley.
Marianna	Jackson	80	8	80.6	.....	98	8	66	23†	28	7.84	.....	1.87	0	17	22	2	7	sw.	W. J. Watson.
Merritts Island	Brevard	20	28	80.2	− 1.3	92	18	69	22†	20	6.03	+ 0.63	1.05	0	13	2	27	2	se.	F. Ulrich.
Miami	Dade	47	10	82.2	+ 0.2	93	26	67	14	20	6.27	− 1.33	2.12	0	15	6	9	16	se.	U. S. Weather Bureau.
Middleburg	Clay	10	10	80.0[e]	.....	97[e]	2†	63[d]	24	30	10.54	+ 2.45	1.94	0	19	.....	.....	.....	.....	G. A. Chalker.
Molino	Escambia	49	9	79.4	.....	99	9	64	23	30	14.80	.....	.....	0	10	22	9	0	s.	W. H. Trimmer.
Monticello	Jefferson	207	7	80.4	.....	96	20†	61	2	26	7.85	.....	2.00	0	13	12	12	7	s.	E. C. Potter.
Mount Pleasant	Gadsden	260	5	79.0	.....	97	6†	62	22	29	5.86	.....	1.50	0	15	.....	.....	.....	se.	Miss Addie Grubb.
New Smyrna	Volusia	9	26	80.4[i]	+ 0.5	95[i]	29	65[i]	26	27	3.31	− 2.69	0.80	0	9	.....	.....	.....	se.	F. Nordman.
Orange City	....do	39	17	80.8	− 1.3	99	18†	63	21	34	6.21	− 0.67	1.28	0	15	9	17	5	sw.	J. D. Graham.
Orlando	Orange	111	18	81.4[b]	− 0.6	97[b]	16	67[b]	22†	25	5.66	− 1.70	2.15	0	15	.....	.....	.....	se.	James Thomson.
Pensacola	Escambia	149	31	80.4	− 0.6	96	8	71	12	22	7.21	+ 0.05	4.48	0	17	8	14	9	nw.	U. S. Weather Bureau.
Pinellas Park §	Hillsborough	20	.....	80.6	.....	93	13†	64	10	19	11.16	.....	2.05	0	18	8	11	12	w.	C. M. De Chant.
Plant City	....do	121	17	80.2	− 1.1	95	18†	68	4	25	11.23	+ 1.48	2.00	0	14	13	16	2	e.	E. B. Trask.
Rockledge	Brevard	28	3	80.8	.....	92	6†	67	23	21	4.14	.....	0.78	0	13	14	12	5	w.	J. H. White.
Rockwell	Marion	10	9	80.8[d]	.....	95[d]	8†	60[d]	1	29	5.98	− 3.37	.....	0	...	.....	.....	.....	sw.	Dunellon Phos. Co.
St. Andrew	Washington	14	14	81.7	− 0.1	100	7	66	22	27	14.12	+ 5.65	4.00	0	18	13	15	3	s.	W. A. Emmons.
St. Augustine	St. John	10	59	81.9	+ 1.3	98	18	65	23	26	5.48	− 0.47	1.95	0	11	23	6	2	e.	E. F. Joyce.
St. Leo	Pasco	140	14	80.0	− 1.7	93	16†	66	22	23	11.06	+ 1.21	2.14	0	17	7	11	13	e.	G. Schneider.
Satsuma Heights §	Putnam	98	3	81.4	.....	97	15†	68	22†	25	8.14	.....	1.47	0	17	3	23	5	s.	Satsuma Company.
Tallahassee	Leon	192	24	78.9	− 0.8	94	7	66	22	22	10.37	+ 3.13	3.50	0	20	17	5	9	e.	W. H. Markham.
Tampa	Hillsborough	79	21	80.8	+ 0.8	93	25	66	22	23	6.71	− 1.88	1.69	0	16	7	15	9	ne.	U. S. Weather Bureau.
Tarpon Springs	....do	20	26	80.4	− 0.7	95	13	65	22	23	14.31	+ 4.46	2.38	0	17	11	15	5	se.	A. P. Albaugh.
Titusville	Brevard	16	15	81.8	+ 0.8	97	18	68	22	27	7.35	+ 2.48	2.76	0	19	7	15	9	se.	F. M. Taylor.
Wausau	Washington	250	11	81.7	0.0	98	6†	65	22†	30	11.38	+ 3.91	1.70	0	14	7	17	7	s.	Curtis Jones.

TABLE 1.—*Climatological data for August, 1911. District No. 2*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Alabama.																				
Alaga	Houston	105	6								7.77		2.00	0	14				n.	James L. Willis.
Anniston	Calhoun	728	20	77.6	+ 1.2	94	9	60	21	27	3.24	− 1.24	0.70	0	16	2	17	12	se.	U. S. Weather Bureau.
Ashville	St. Clair	685	18	76.6	− 3.0	94	10	60	21	30	7.56	+ 3.56	2.65	0	12	12	12	7	sw.	George R. Cather.
Auburn	Lee	732	29	80.6	+ 1.8	99	9	64	22†	29	4.34	− 0.49	2.08	0	11	5	21	5	nw.	Dr. Jas. T. Anderson.
Benton	Lowndes	149	10								4.47	− 0.21	1.24	0	8				e.	S. T. Pruitt.
Bermuda	Conecuh		24	79.7	0.0	98	28	64	31	29	6.85	+ 1.51	3.01	0	10	9	16	6	se.	M. J. Morris.
Birmingham	Jefferson	701	23	77.9	− 0.8	94	10	65	30	25	2.10	− 2.38	0.59	0	11	7	15	9	n.	U. S. Weather Bureau.
Calera	Shelby	500	10								3.58	− 0.77	0.99	0	10				e.	L. G. Privett.
Camp Hill	Tallapoosa	738	10	78.2	− 1.5	97	9†	60	1†	30	5.48	+ 1.36	1.25	0	10	16	9	6	e.	Dr. Lyman Ward.
Cedar Bluff	Cherokee	594	7								4.15		1.40	0	5					Joe L. Daniel.
Citronelle	Mobile	331	23	81.0	+ 0.5	98	8†	67	30†	26	7.35	+ 1.15	5.42	0	15	8	18	5	se.	Rev. W. H. Rowe.
Clanton	Chilton	590	18	78.6	− 0.8	97	9	63	22	29	2.28	− 1.48	0.82	0	10	7	5	19	se.	Wallace C. Edler.
Cochrane	Pickens	100	1								5.40		2.10	0	8				ne.	T. H. G. Cook.
Cordova	Walker	334	20	78.2	− 0.8	96	10	54	31	29	6.16	+ 1.52	1.33	0	15	9	12	10	s.	Scott Maxwell.
Cullman	Cullman	802	3	76.2		95	4	61	21	30	5.44		1.06	0	15	9	17	5	w.	Eugene A. Grayot.
Dadeville	Tallapoosa	760	6								6.05		2.50	0	10				e.	Dr. W. B. Fulton.
Daphne	Baldwin		20	80.6	− 0.8	98	8	66	23	28	7.76	− 0.22	2.20	0	13	10	5	16	sw.	John H. Young.
Demopolis	Marengo		19								3.99	+ 0.14	1.12	0	10	17	3	11	sw.	George E. Pegram.
Eufaula	Barbour	200	27	79.1	− 0.8	96	28	63	22	25	2.58	− 2.75	0.68	0	13	18	8	5	se.	Dr. J. B. Whitlock.
Evergreen	Conecuh	285	27	80.9	+ 0.7	99	9†	64	1	31	7.39	+ 2.51	1.70	0	11	17	0	14	s.	Robt. L. Whitcomb.
Flomaton	Escambia	91	19	81.2	+ 0.3	98	8†	66	23†	29	6.16	− 0.42	2.68	0	11	10	8	13	s.	T. J. Farris.
Fort Deposit	Lowndes	520	27	79.8	− 0.3	96	26	65	23	26	2.75	− 1.33	0.70	0	7	16	2	13	se.	J. F. Hattener.
Gadsden	Etowah	621	27	79.2	+ 0.2	95	9†	62	21	28	4.10	+ 0.01	1.74	0	11	11	7	13	e.	D. P. Goodhue.
Goodwater	Coosa	826	16	79.3	− 0.8	99	9†	62	4	33	4.30	− 0.90	2.00	0	7	17	0	14	se.	Miss Daisy Buice.
Greensboro	Hale	220	32	79.2	− 0.4	96	9	62	21	25	4.42	− 0.22	0.90	0	10	14	5	12	s.	W. E. W. Yerby.
Greenville	Butler	444	10								4.65	+ 1.43	2.24	0	7					E. M. Lewis.
Hamilton	Marion		15	77.6	− 2.2	96	10	62	18†	30	4.94	+ 1.20	1.17	0	10	16	5	10	sw.	Prof. H. O. Sargent.
Highland Home	Crenshaw		19	79.8	+ 0.2	95	9†	60	14	33	3.89	− 0.85	1.10	0	12	15	4	12	w.	Prof. Samuel Jordan.
Livingston	Sumter	160	27	79.8	− 0.7	96	5	67	23†	25	2.63	− 1.19	1.21	0	6	17	0	14	e.	Robt. L. King.
Lock No. 4	Talladega	510	14	77.8	− 1.9	94	8†	61	23	28	6.04	+ 1.91	1.75	0	12	19	0	12	w.	U. S. Engineers.
Maple Groove	Cherokee		18	79.2[a]	+ 0.2	97	8†	60	21†	31	4.68	+ 0.49	1.10	0	11	5	23	3	nw.	Mrs. A. L. Awbrey.
Mentone	Dekalb	1,595	4								4.40		1.31	0	7				w.	E. Mason.
Milstead	Macon		8								3.38		1.20	0	7				e.	Evie Oswalt.
Mobile	Mobile	84	39	81.0	+ 1.3	96	8	70	31	24	8.81	+ 2.00	4.60	0	16	9	18	4	sw.	U. S. Weather Bureau.
Montgomery	Montgomery	240	39	80.0	+ 0.3	96	9	68	23	24	4.09	− 0.15	1.02	0	14	4	20	7	n.	Do.
Newbern	Hale		18	80.6	− 1.0	101	8	67	23	32	4.65	+ 0.28	1.35	0	12	4	18	9	se.	Dr. J. Huggins.
Oneonta	Blount	857	17	75.7	− 2.0	94	10	58	21	28	4.01	− 1.13	1.08	0	16	8	1	22	w.	Aquilla J. Ketchum.
Opelika	Lee	817	32	78.8	− 0.4	97	9†	64	21†	25	5.99	+ 1.49	1.50	0	13	16	3	12	e.	A. H. Read, jr.
Ozark	Dale	400	9	80.8		94	8	66	23	25	4.42		1.60	0	9	20	7	4	s.	Miss Lucy Sellers.
Prattville	Autauga	281	11	79.0	− 1.2	98	15	64	23†	27	4.31		1.10	0	10	11	18	2	ne.	Jos. B. Bell.
Pushmataha	Choctaw		20	79.8[a]	− 0.9	97	5†	65	31	26	7.64	+ 3.17	2.22	0	10	3	7	21	nw.	W. N. Horn.
Selma	Dallas	147	31	80.6	− 0.4	98	9	68	2†	25	3.47	− 0.91	1.24	0	13	16	5	10	e.	Charles F. Brislin.
Spring Hill §	Mobile	312	7	81.6		98	7	68	23†	25	10.60		3.70	0	14	2	23	6	sw.	Spring Hill College.
Talladega	Talladega	554	21	80.2	+ 0.6	99	17	61	23	32	4.72	− 0.06	1.40	0	9	16	6	9	s.	W. E. Henkel.
Tallassee	Elmore		20								3.91	− 0.88	1.05	0	13				n.	P. A. Noble.
Thomasville	Clarke	385	20	77.7	− 3.0	97	9†	61	14	29	6.67	+ 1.82	2.01	0	11	20	1	10	e.	J. G. Forster.
Troy	Pike	581	3	80.4		99	8	64	22	27	3.57		0.67	0	15	2	27	2	n.	Frank L. Zimmermann.
Tuscaloosa	Tuscaloosa	230	30	80.8	+ 0.1	102	10	66	30	29	2.06	− 1.76	0.53	0	10	14	1	16	se.	W. S. Wymann, jr.
Tuskegee	Macon		11	81.4	− 0.4	100	9	64	23†	31	5.62	+ 2.63	2.22	0	6	1	27	3	s.	Prof. Geo. W. Carver.
Union Springs	Bullock	216	24	80.9	+ 0.2	97	8†	66	23	27	3.71	− 1.09	1.09	0	8	4	25	2	se.	P. L. Cowan.
Uniontown	Perry	273	25	79.1	− 1.6	99	9	59	7	37	2.93	− 1.45	1.10	0	9	15	9	7	nw.	F. D. Stevens.
Valley Head	De Kalb	1,031	26	78.1[b]	+ 1.7	97	8	57	21	36	3.38	− 1.37	1.00	0	8	4	26	1	s.	M. T. Floyd, M. D.
Wetumpka	Elmore	205	19	80.5	− 0.9	98	9†	65	23	28	6.15	+ 1.53	2.28	0	9	19	0	12	e.	U. S. Engineers.
Mississippi.																				
Aberdeen	Monroe	210	23	78.8	− 0.6	98	10	64	30	28	5.85	+ 1.92	1.52	0	11	15	3	13	s.	L. D. Godfrey, jr.
Agricultural College	Oktibbeha	424	21	79.0	− 1.5	98	10	62	30	26	5.10	+ 1.05	1.35	0	12	7	24	0	sw.	J. R. Ricks.
Bay St. Louis	Hancock	28	18	81.2	− 0.4	97	8†	68	10	24	8.58	+ 1.49	2.88	0	19	6	19	6	s.	Brother Stanislaus.
Biloxi	Harrison	24	20	81.8	+ 0.1	99	9	71	5†	24	5.02	− 1.82	1.07	0	18	6[b]	14[b]	9[b]	sw.	Miss M. Josie Pope.
Booneville	Prentiss	504	17	76.9	− 2.3	93	10	61	30	22	6.19	+ 3.05	1.62	0	14	8	19	4	s.	Dr. D. T. Price.
Brookhaven	Lincoln	500	23	80.5	− 0.7	99	8†	65	31	28	6.18	+ 0.92	1.17	0	15	14	6	11	se.	W. J. Bee.
Columbia	Marion	110	7								6.55		1.08	0	16	18	1	12	nw.	N. R. Drummond.
Columbus	Lowndes	191	23	79.8	− 1.6	100	10	66	23	29	4.71	+ 0.45	1.38	0	7	14	2	15	se.	J. B. Love.
Crystal Springs	Copiah	468	19	79.9	− 1.0	99	10	63	30	27	4.53	− 0.22	1.30	0	11	18	13	0		D. H. Miller.
Edinburg	Leake		3	79.4		98	8	62	30	28	8.47		2.22	0	11	10	11	10	s.	J. Y. Blocker.
Enterprise	Clarke	248	6								4.88		1.45	0	10					J. B. Thompson.
Fulton	Itawamba		2								7.35		2.45	0	14	15	0	16	n.	A. L. Summers.
Hattiesburg	Forest	189	18	81.2	− 1.6	99	6†	66	3†	31	2.96	− 2.25	1.26	0	7	23	0	8	n.	T. C. Spence.
Hazlehurst	Copiah	460	21	79.6	− 1.9	100	10	64	30†	28	5.30	+ 1.15	1.44	0	12	13	5	13	w.	J. D. Granberry.
Hickory	Newton	326	1								6.76		2.43	0	12	16	9	6	w.	T. N. McMullen.
Jackson	Hinds	280	24	80.7	− 0.1	98	10	63	30	26	5.67	+ 1.39	2.39	0	16	10	8	13	sw.	A. S. Nall.
Lake	Scott	446	23	78.5	− 0.7	97	9	62	30	28	6.48	+ 1.68	1.67	0	11	13	7	11	se.	Mrs. Eddie McNeel.
Lake Como	Jasper		8	80.6		100	8	64	31	32	5.52		1.43	0	11	8	8	15	s.	C. Thigpen.
Laurel	Jones	241	7	79.8		97	8†	64	29†	27	6.90		2.00	0	15	15	11	5	ne.	Thomas W. Flynt.
Leakesville	Greene		17	80.9	− 1.7	99	9	62	25	30	7.25	+ 1.18	2.00	0	9	11	8	12		Dr. Sam Pool.
Louisville	Winston	561	22	79.0	− 1.5	99	10	62	30	25	3.69	− 1.08	0.81	0	12					B. T. Webster.
McNeill	Pearl River	230	8	80.4		97	8	68	2†	23	6.57		1.95	0	11	7	23	1	se.	Prof. E. B. Ferris.
Macon	Noxubee	185	23	79.4	− 1.4	99	10	61	30	28	2.90	− 1.01	0.94	0	10	10	6	15	e.	Finis E. Carleton.
Magnolia	Pike	415	15	80.2	− 0.2	98	9†	66	24†	26	8.04	+ 1.60	1.97	0	14	8	15	8	e.	Miss Ruby V. Roberts.
Meridian	Lauderdale	375	21	78.6	+ 0.1	95	8	63	30	24	5.23	+ 1.68	1.27	0	10	6	16	9	ne.	U. S. Weather Bureau.
Merrill	Greene	76	6								8.00		1.70	0	13	15	4	12	n.	L. C. Helms.
Monticello	Lawrence	209	4	80.8		99	9†	65	24	29	6.09		2.00	0	15	8	18	5	s.	Dr. G. A. Teumisson.
Okolona	Chickasaw	311	23	78.7	− 2.3	98	9†	62	30	26	8.01	+ 4.92	2.31	0	15	13	3	15	s.	D. H. Shell.
Pascagoula	Jackson	15	2	81.1		99		69	3	26[a]	10.80		4.05	0	17	10	8	13	s.	Frederick Hess.
Pearlington	Hancock	10	23	80.6	− 0.1	98	8†	65	22	28	5.73	− 1.09	1.61	0	12	5	21	5	w.	Miss Annette Koch.
Porterville	Kemper		6	79.6		101	10	64	24	31	5.63		1.54	0	13	6[a]	18[a]	6[a]	sw.	I. S. Rea.
Shubuta	Clarke	197	6								3.72		1.02	0	8					George A. Floyd.
Tupelo	Lee	278	12								5.50	+ 1.89	1.68	0	11	4	7	20	n.	W. H. St. John.
Waynesboro	Wayne	191	24	79.6	− 0.8	98	9	64	31	27	6.10	+ 1.23	1.20	0	11	14	6	11	s.	R. S. Burke.
Woodland	Chickasaw		2								5.55		1.88	0	10					Tallahatchie Drainage Com.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 2, South Atlantic and east Gulf States.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Virginia.																																	
Arvonia	James			T.	.82	.84	.39							.32	.14	.06			T.						T.	.04	2.40	.03	.09	.33	.68	1.78	7.92
Ashland	do	.30	T.	T.	1.22	2.10	.17							.06	1.22	.07			T.						.52	T.	1.01		.48	.48	2.02	.63	10.28
Bedford City	Roanoke	.16		T.	.17	1.02	.11				T.			.09	.31	.45			.08							.10	.16	T.	.04	.16	.90	1.12	4.87
Buchanan ‖	James					.52		.06								.59	.12									.31	.52	.92	.08	.60	.83	.93	5.48
Callaville	Chowan			.08	.19	1.65	.11			1.65					.52	.48					.76	1.39							.08	.07	1.10	.60	8.68
Cape Henry	Coast				.15	.10	.01							.15	.03	.28			.01			11									.54	1.81	3.19
Catawba	Roanoke	.05			1.05	.03							1.70			.10			.13						.02	1.10	.03		.65	.90	.80	6.56
Charlottesville	James	.27	.02	.11	.14	.20	1.91	T.			.02			1.09	.03	.11	T.									.02	.12	.03		.21	1.36	1.37	7.01
Clarkesville ‖	Roanoke				.65						.90			.05	T.	.80	.20											.65	.15	1.06	.95	5.41
Columbia	James		.35	.10		2.20	.55							.10	.75	.08										1.70	.62		1.05	.70	.75	1.20	10.15
Covesville	do				.10	.38	.95			.17				.90	.13	.17												.30		1.07	2.00	.27	6.44
Danville ‖	Roanoke				.46		.20	T.			.38			.32	.06	T.	T.					T.									1.12	1.92	5.43
Diamond Springs	Coast				1.49	.09	.12			.06					.43		.41		.01	.03	.05	.02					.27	.70	T.				4.09
Hampton	do			T.	.14	.38	.04				.46		T.				.55		T.			.34						.14			.99	.99	4.38
Hot Springs	James			.10	.44	.08	.36	.10					1.50	.24	.12	.60															1.59	.74	5.45
Ivor	Chowan				.11	1.90	.14			*				*	1.10				*			*				.03	.53			1.00	2.20	.67	7.97
Lassiter ‖	James	.18			.40	.43																						.40			.90	.90	5.45
Lexington	do	.02		.44	.71		.16		.17				.08	.25	.16	.51			.02								.45	.16		1.19	2.40	1.05	6.51
Lynchburg	do			.11	.08		.01			.20				.62	.77	.16			.26						.06	.04	.64			.23	1.30	1.10	5.91
Newcastle ‖	do																								.01	.45	.58			.47	.80	1.21	5.73
Newport News	Coast												.09							.10					.62			.19	.11	1.12	1.22	1.31	4.76
Norfolk	do			T.	1.76	.03	.34			.09				.13	.01	.46			.09		T.			.04				T.			.83	2.15	5.93
Petersburg	James				T.	.10				1.70					.17	.70										.15	.15	.15	.50	T.	.60	.75	4.97
Randolph ‖	Roanoke				1.03				.20			.30				.90															3.00	1.80	7.23
Richmond	James	T.	.01		.03	.79	1.26	T.		.02				.32	.08	.02			T.						T.	.43	1.09	T.	.59	.38	1.73	.51	7.26
Rockymount	Roanoke			.69	.51	.29					.37			1.20													.65	.11	.04	1.60	.88	1.48	7.82
Saxe	do			1.76											.25	1.79													.25		2.25	.80	7.10
Spottsville (near)	Chowan		.25		.77	.20	.27			.17			T.		.10	.55			.17			18						.04			1.18	1.21	5.09
Williamsburg	James				.20	.10	.10			.20			.10	.20			1.20			T.											.20	1.55	3.85
North Carolina.																																	
Albemarle	Pedee	.06	.24	.11	1.10	.38	.01			.06					.27	.03	T.				.73	.03		.09	T.	.02	.62	.34	.47	1.07	1.19	2.46	9.28
Beaufort	Bogue Sound				.73	.45	.29							T.	.14	.07			.17	.08	1.45	.69	.26					.02			.21	.17	4.73
Belhaven	Pungo					.11										.02								.70				.03			1.02	1.88
Caroleen	Santee			1.33	.07	.50	.88							.18	.30				.38						.33		.15	.10	.68	.17	.45	.50	6.02
Chalybeate Springs	Cape Fear			.33	.48		T.				.34	.17			.01	.28					.38	T.						.18			.71	1.43	.90	5.21
Charlotte	Santee	.01		.70	1.23	.06								.25					.02			.03			T.	.35	.52	.98	.57	1.36	.12	6.20
Chimney Rock	do	.90	.30	1.00	.17		.70								.44	.42						21			.03	.75		.42	.64	2.06	.64	8.68
Durham (near)	Neuse	.05		1.96	.98						.76			.29	.14		.29				.11						.40		.50	2.06	.48	8.02
Eagletown	Chowan	.18		.25	2.05	T.	.33	T.		1.55	.24				.45	.60	.16				.53	.16	T.					.33	T.		1.89	.18	8.90
Edenton	Albemarle Sound.				1.00										.10	1.90					.08	.60						T.			.30	.05	4.03
Elizabethtown ‖	Cape Fear	.35			.41	.55	.05		.57	.56						.45					2.20	.32											7.26
Enfield (near)	Tar	.05				1.60					1.90						.28				.20									.20		.50	.90	5.63
Fayetteville ‖	Cape Fear	.11			.09	.04					.15				2.00					.65	.17	.02	.10		.08		.05		.12	.06	.98	2.14	6.76
Goldsboro ‖	Neuse					1.93	T.	T.	T.		.10				.08	.25	.02				.15				T.					.30	.02	.35	.33	3.53
Graham ‖	Cape Fear				.89	.27	.04	.02			.16			.10		T.	T.					1.32									.40	.11	.45	.05	1.74	2.90	8.45
Greensboro ‖	do		.56		.63	.31					.38																			.88		.62	.15	.51	1.75	5.79
Greenville ‖	Tar					.18	.18	.17	.01		.65					.02	.25			.01	.47	.13			.14		.26		.03	T.	T.	.83	3.33
Hatteras	Pamlico Sound.				T.	.36	.03								.01	T.			.02		.05	1.80	.98					T.			.03	.08	.25	3.61
Henderson	Tar and Roanoke.			.66	.19	1.30	.34			.32					.74	.78			T.		.90						.41	.22	.06	.29	1.55	.21	7.97
Kings Mountain (near)	Santee		.01	.45	.07	.20				.42																	T.	.85	.60	.32	.32	.23	3.47
Kinston	Neuse				.61	.02	.01	.02			.09			.48	.01	.78			.23		1.07		.02					.27	.04	T.	.08	.31	4.64
Lenoir	Santee	.04		1.91		.08									.04		.05									.10		.15	.93	.38	.70	1.07	5.45
Lincolnton	do			.41	.12	.26		.19										.52	.05						.34				.64	.06	.22	.02	2.83
Louisburg ‖	Tar					.95					.18					1.35	.65				.15								.95	T.	.50	.94	5.67
Lumberton ‖	Lumber	.80		.04	.11	1.07		.02	.59		.04				.06	.30	.37			.88	1.33	.42	.02		T.	.20	T.		.60	.19	1.90	1.12	10.06
Manteo	Roanoke Sound.					.14	.52										.32		1.39		.12		.48	.06							.30	.92	4.25
Marion	Santee	.02	.01	1.46	.06	.26	.04	T.			.19		T.		.07	.04			.01			T.				.07	.65	.04	.26	.23	1.20	.55	5.16
Middletown	Pamlico Sound.				T.	1.07	.10	.13						.51			T.		.85		*	.65	1.26					.20	T.	T.	.25	.31	5.33
Moncure ‖	Cape Fear	.04			1.88	.35					.44				T.	.80	.04					1.05	.05					.45	.04	1.11	1.32	7.57
Monroe	Pedee	.40		.44	.34						.30				T.		.08		T.		.27	T.			.10		1.00	.16	.75	.60	.23	.97	5.64
Morganton	Santee	.08	.29	1.97	.21	.01						T.				.16	.05									T.	1.43	.27	.35	.41	.43	1.29	6.95
Mount Airy	Pedee	.02	.15	.13	1.65	.67				T.				.41	.27	.51	.05		.03							T.	.29		.30	.35	.93	.33	6.09
Hount Holly ‖	Santee	T.	.12		1.86	.10	.12				.30				.08					.04							.22	.06	.26	.82	.10	.68	4.76
Nashville ‖	Tar							.20			.49					.25	.75				.68	.05							.14		.30	.80	3.66
Neuse ‖	Neuse				.46	.37	.15				.94				.88	1.57	.08					.23							.12		1.08	2.17	8.05
Newbern	do				.20	.10	.63	.58			.05				.02	1.09	.04		.06	1.72	.02	.14					.24		.03	.02	.06	.29	5.32
Pinehurst	Lumber				1.40					2.92					.23	.53	.75			.21	.52							.65	.15	2.40	.68	.20	10.64
Raleigh	Neuse			.55	1.47		T.				.34			.06	1.44	.35				1.47	T.							.04		.17	1.37	.10	7.36
Ramseur	Cape Fear	.01		1.32	1.93						.70	.06		.15	.30						.22								.24	1.25	2.49	2.50	11.17
Randleman ‖	do		.07		.74							.18																	.05	.08	.88	2.00	5.15
Reidsville ‖	do		.29	.02	1.50	.82	.15	.05							1.02														.51	.04	.08	.04	1.08	2.25	7.85
Rock House	Savannah	.63	2.09	1.30	.10	.59	1.00	.40		.02					.09	.04	.03		.04			.09			T.	.71	.71	.36	.24	.80	3.97	.11	13.32
Rocky Mount ‖	Tar	.20				2.50		.19			.25					.21	.69				.72										.40	.73	5.89
Roxboro ‖	Roanoke		2.30	.10		.50									.25	.70			.25	.15												9.68
Salem	Pedee			.38	.27																					.55		1.80	2.35	.73			5.30
Salisbury ‖	do				.46						.20				1.50										.15		.20	.82	.63	.60	1.35	.90	6.68
Saxon ‖	Roanoke	.03		.95	.82	.03				.55				.28					.02								.55	.41	.16	.92	.14	2.34	7.10
Scotland Neck	Tar	*	*	*	2.00	.30	.15		.80						.80	.50					.36	.09				.75	.10	.13	.91	.83	1.65	.05	5.68
Selma	Neuse			.65		.10				.40				.20	.25	.20													.13		.40	.15	5.85
Settle	Pedee	.54		T.	T.	T.					T.			T.		.11			T.			T.		T.			.30		.25	1.40	2.10	3.00
Sloan	Cape Fear				.94	.32		.38		.05		.57			.45	.22				.13	.90	T.	.45	.15	.50	.06		.77		.52	.42	T.	.47	.17	5.90
Smithfield ‖	Neuse				.44	.41		T.			.57					.51	.12				.03	.02	.03							.36	.03	.25	.31	.40	4.45
Snow Hill	do	.42			.62										.10	2.11					1.47			.31	.67		.01	.53	.05	.04	.47	.15	7.37
Southern Pines	Cape Fear			.60	.50					1.25	.10			.12							.15	.30						.70	.60	.80	.40	6.22
Southport	do				1.54	.45		.58								.12			.48		1.38	2.34						57					7.46
Statesville	Pedee			T.	.26												T.											T.	.44	.34	2.10	.40	3.54
Tarboro ‖	Tar		.01		.30	.56	.20	.61			.72				.08	.84					.22	.24							.13	.16		1.09	5.16
Weldon ‖	Roanoke	.11			T.	1.03	T.	.33			.37				.04	.30						.01							.29	.15	.46	1.01	4.10
Willard	Cape Fear		.12	.99			.73			.48				.07	.10	.32			.08		.73	.46		.21	T.			.07		T.	.40	.22	4.98
Wilmington	do				4.83	.70	.01	.52						T.	.96	.02	T.		.65		3.89	.07						1.07		T.	.11	1.02	13.85

TABLE 2.—*Daily precipitation for August, 1911. District No. 2*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
South Carolina.																																	
Aiken	Edisto													.25											1.50					.82	.75		3.32
Allendale ‖	Savannah		.20	.60	.60						.85										.85							.59		.25	1.15		.50	5.59
Anderson	do	.03	.28	.20				.02														.03		.07				.05		.05	.17	.81	.05	1.76
Batesburg ‖	Edisto			.04	T.	T.	.90								.12					.06		T.							.40	1.54	.12		1.02	4.20
Beaufort	Ocean			.30		T.		.10	T.		T.								.56	.33	T.	T.	.20		.25	.35			2.00	.10	.03	.05	4.27
Blackville ‖	Edisto			.50	.04		.50	2.15			.34		.02						.02		.73		.03	.22			1.07	.01		.10	.70	.02	1.50	7.95
Blairs ‖	Broad			.20	.96	.06											.10			.35	.18			.08		.16	.30		1.44	.22	.14	.08	.31	4.58
Bowman	Edisto	T.	.30	.86	T.		.19	T.		1.12										.14		.37			1.47			.17	.41	.24	.43	.14	5.84
Calhoun Falls ‖	Savannah				.32																.36				.18	.22	.05			.39	.52		2.04
Camden ‖	Wateree	1.48			1.02	.80					.66	.62										1.68	.30						1.68	.70	.62	1.74	11.30
Catawba ‖	Catawba	.18			1.54	.0											.34								.30			.60	.50	.35	.34	.55	4.73
Chappells ‖	Saluda						.72	.16			.46																					2.01	3.35
Charleston	Ocean			T.	.40		T.	.19	T.		.58	.10							T.	1.33	.02		T.		2.67	.97	1.26		T.	7.52
Cheraw ‖	Pedee		.01		1.90	.0		T.	.08		.05						.35			.33		1.05			.02	.01			.89	1.55	.14	2.10	9.12
Clemson College	Savannah	.95	.08	1.05	.02																	T.			.20			T.	.24		1.26	1.36	5.16
Columbia	Congaree	T.	.07	.20	.07			T.		.54	.19				.04	T.	T.	.67	T.	.08	1.19	.18		T.	.02	.02	0	.21	1.32	.02	1.21	T.	6.03
Conway ‖	Waccamaw			3.12	.97		T.	.26	1.07						.31					.09	T.	1.71	T.					T.	.53	T.	.99	T.	9.63
Darlington	Pedee	.03			.09			.20			.03						.09		.15	.05		.30							.87	1.06	.35	1.15	4.57
Dillon	Little Pedee		T.	.24	.30			.25		.20	.13				T.	.02			.27		.38	T.		.11	T.	T.		.25	.65	.83	2.14	.15	5.92
Effingham ‖	Lynches			.85	.70				.50		.20									.20		.30	T.			T.			.50	1.50	.50	.40	5.65
Ferguson ‖	Santee			.72	.42				.11				.50					.02		.90	.15	.35				T.			.40	1.15	.15	.18	5.08
Florence ‖	Pedee	T.		.37	.90	3.0			.35		T.	T.				.12	.30			.06		.33			.09				.71	.96	.82	.71	8.82
Georgetown	Ocean	.40		.70	1.45		.58	.28				.65					.60		.80	1.30	.80	.23						2.00	3.00	T.	T.	.22	13.01
Greenville ‖	Saluda	.08	.25	1.14	.43		.59	1.30			.10							T.	T.					.04	.23		T.	.20	.17	1.03	5.71
Greenwood ‖	do			.18	.42		.48				.21									.99					.23		.34	.10	.35	.23	.57	4.17
Heath Springs	Wateree	.32		.85	1.15					1.50				.63	.03				.11			.11				.58		.05	.50	.36	1.21	1.82	9.22
Jacksonboro	Edisto		.72	.31	.75							.43	.12								.11	.49				.15		.60	1.22		.40	.40	5.75
Kingstree ‖	Black				.48			.05												1.30		.30	.37						2.44	2.38	.20	.55	8.60
Liberty	Savannah	.25	.25	.30	.35		.04	.02		.02									T.			.90		.02	.20	.02	T.		.02	.12	.68	1.40	4.61
Little Mountain	Saluda	.45	.35	.20	.12					.54				1.18						.20		.48		.45	.28				.50	.15	.10	.25	5.52
Meriwether	Savannah		T.	.30	.33					.08		T.					T.	T.	.27			T.		T.	T.	T.	T.	T.	T.	.87	.33	1.36	3.59
Newberry	Saluda	.68	1.11	.57	.08		.73			.31	.07						.04			.24	.10			.45	.55	.10			.30	.08	.07	.53	6.01
Pelzer ‖	do	T.		.36	.32													.48								.40			.02	.26	.44	.70	2.98
Pinopolis	Cooper	.04	.38	.35	.75		.10				1.40		.20							.80		.20	.04					1.70	.80	1.00	1.25	.35	9.36
St. George ‖	Edisto			.38	.23							.13									.48	2.50	.15			.20	.20		.90	.65	1.00	.75	8.02
St. Matthews ‖	Santee				.40	.0	.18		.08		.30										.02		.23	.13					.33	.78	.90	.65	4.16
Saluda	Saluda			.52	.42	.67				.26															.15		.30	.40		.52		.20	.90	4.34
Santuc	Broad		T.	.71	.10					T.				T.		.23	.47	.14				.04		.16	T.		.14	.07	.50	.21	.10	2.09	4.96
Smith Mills ‖	Pedee				.32	.96			.28						.18			.08		.72	.08	.28							1.51	1.79	1.25	.73	8.18
Society Hill	Pedee			1.40	.60		.40			.05						.01			3.02			.10						.83	.58	.96		1.01	8.96
Spartanburg ‖	Broad	.22	T.	.12	.17	.05		1.00							T.												.35		T.	.22	.12	.56	2.81
Summerville	Ashley		.45	1.73	.04	.01	.01	.06			T.	1.07		.20					.33	.05	.02	.11	.12	.04			.39		.59	.95	1.16	.61	.57	8.51
Trenton	Edisto		.12	.68	.1	.00				.08		.40		.05						.05						.18		.80	.15	.07	.27	.63	.38	4.99
Walterboro	Ashepoo		.07	1.40	.08	T.	.15					.06								.02	.28	.14	.71			.22			.25	2.00	.17	1.17	.05	6.77
Winnsboro	Broad									.50					T.				T.			.40			.50	T.	T.		.80	2.15	.70	.50	5.55
Winthrop College	Catawba	T.	T.	1.24	1.65									T.			.04					T.		T.	.05		.07	.60	.23	.34	.21	.74	5.17
Yemassee ‖	Combahee			.50	.92						1.77	.05									.05			.02		.07		2.00	.96	.50	.18	7.02
Georgia.																																	
Abbeville ‖	Ocmulgee	1.10	T.	.44	T.	.21		1.38			.19		.13	T.	.12		.51	.11	.14	.24		T.			.15		.04		T.	1.45	3.06		9.27
Adairsville ‖	Coosa	.25	.57	.55	.04										.25	.27		T.		.18											1.01		3.14
Albany ‖	Flint	T.	.98	T.				.46				.56	.40	.06	T.		.02	.23	.10	1.09	.10			.06	T.	.40	.82			.16	.04	.68	6.16
Allapaha ‖	Allapaha			.87		.26			.28			.20	1.67	.35	.68		.19			.15				.40	.17			.75		.92	2.01		8.90
Americus ‖	Flint		1.95	.30									1.83	.96			.70		.98										.68			7.40
Athens ‖	Oconee	.08	2.07	1.61	.7			.73			1.34						.11		.10	.47	.68	.06								.11	.45	.05	8.52
Atlanta	Chat'ho'chee	.53	.62	.07	T.			.03				.04	T.				T.	.25	.03								.03	.30		.05	.04		1.99
Augusta	Savannah		.02	.22	.0	.03						T.			T.	.16	.02		.05			T.		.44	T.		1.40	T.	.08	.20	.64	.94	4.27
Bainbridge ‖	Flint	.12	T.		.1	.06		T.	.11	.90			.63				T.	1.45	.50	1.11	.86	T.	.15		.10	.01	.10	.15			.86	.20	7.43
Barnesville	do	.31	1.04	1.15	.1					.25		.18	.12	.06			.11		.05					.04				.21	.08	.02				3.76
Blakely	Chat'ho'chee	T.		.50				T.	T.	T.	.54	.25	.46	T.		T.	T.	T.	.54	1.40	T.		.31	.08		.65			T.	.10				4.83
Butler ‖	Flint		2.00		.2								.80						.11							.50				.15		.40	4.16
Camak ‖	Savannah		1.45	.12	1.2						.15							.73		1.00	1.37						T.	.25		.45	.87	2.90	10.56
Canton ‖	Coosa	.50	.60	.71	2.75		T.		T.								.28			.33											.13	T.	5.33
Carlton ‖	Savannah	.12	.44	.23	.2						.47									.95	.12						15			.10	.48	.41	4.24
Clayton	do	1.08	.52	2.00	.05	T.	T.	.40		.05	T.			.15	.48		.47								.10	T.	.59	.67		.26	1.00	.10	7.92
Columbus ‖	Chat'ho'chee		1.07	.19	.01				T.		.59	T.	.11	.36	.38	.42		T.		.18				T.	T.	T.			.22	.13	.01		3.73
Covington ‖	Ocmulgee	.80	1.25	.70	1.00			.30				.20	.25			.25								.05	.10					.10	.05		5.05
Cuthbert ‖	Chat'ho'chee		.60	.80														.22	1.75	.05				.54	.30				.14				4.40
Dahlonega	do	.39	.19	.42	.15	.03								.09	.05				.56									.33		.08	.46	.03	2.78
Diamond	Tennessee	.12	.03	.14	.04			.64						T.	T.	T.		.18	.82							T.		.30		.11	.26	.04	2.68
Dublin ‖	Oconee	T.	.52	.37	.26	.26	.16																							1.30	1.87	1.02	5.76
Eastman ‖	Ocmulgee	.04	.01	.12	.21	.06			.07		.16	.41	.26	.15			.42		.22	.20				T.	.29					.61	2.58	.87	6.64
Eatonton	Oconee		.17		.25					.82		.24	1.05	.10				.84		.47						.60	.02	1.43	.08	.12	.04		6.27
Elberton	Savannah	.40	.43	.52	.22	.27				.15									.42					.07			.21			.28	.53		3.50
Experiment	Chat'ho'chee	.80	1.35	.30					.08			.45		.10			.10										.95						4.13
Fort Gaines ‖	do		.30	.58		.90					.55		.10		.83				.45	1.80	.24			1.19	.12	.15							7.21
Gainesville ‖	do	.34	.40	.60	.10	.12					.05									.10							.11				.70	.10	2.62
Gillsville	Oconee	.10	.17	.11	1.62														.29	T.						T.	.24			T.	.37		2.90
Glennville ‖	Altamaha		T.	1.23	.22	.03	T.	T.			.16	.62	.20		T.		T.	.21	.34			.18		.08	T.	T.		T.	2.55	2.05	.11	T.	8.55
Gore	Coosa	.04	.24	.03						.04	T.				.41	.11	.56	.05	.06		T.						.15		T.	.02			1.71
Greensboro ‖	Oconee	T.	2.08	.49	.36	.05					.04	T.					.38			.85							.78		.18	.61			5.82
Griffin ‖	Chat'ho'chee	.60	1.38	.30	1.73	.85			T.		T.		.60	.28				.62		.10	T.						.50	.05	T.	.03	.04			7.08
Harrison	Ogeechee		.28	.02	.27								.18						.05						.61			.10	1.75	.70	.27		4.23
Hartwell	Savannah	.25	.01	1.44															.08						.16	.01	.15	.11			.19	.81	.10		3.31
Hawkinsville ‖	Ocmulgee	.40		.02													.04			.44											.60	.32	1.80		3.62
Helena	do	.01	1.21	.18	.23	T.					.82	.25	.06	T.		.94	.06		1.65	.12	T.		T.	.80	.23	T.	.39	.01	.38	4.05	4.06	.74		16.20
Lisbon	Savannah		.57	.50	.02	.01		.20		.02	.12	.08		.46	.37				.20							.94	.03		.02	.25	.54			4.33
Lost Mountain	Chat'ho'chee							.77								.18	.20	.25	.33												.05			1.78
Louisville	Ogeechee	.62	.46	.38	.02	.05												.25	.03										.44	.96	.22	.14		3.57
Lumber City ‖	Ocmulgee		.01	1.34	2.41	.34		.04			.02	.34	.34	.05	.03		.36		.08	.46				.02	.25	1.02		.02		4.15	9.37	.62		21.27
Lumpkin ‖	Chat'ho'chee	.76	1.33	.08	.26				T.			.62			T.			.79	.50										.39					4.73
Macon	Ocmulgee	.42	.09		.21		.04	.16		.02		.14	.04				.11		.78	.39						.01	.16		.20	.40	.85	.13		4.15
Marshallville ‖	Flint	.21	.80	.56	.05		.09				.48		.17	T.				1.10	.13	.65					T.	.98	T.	T.			.30	T.	.33		5.85
Milledgeville ‖	Oconee	.07	.15	.35	.16		.02				.78		.99		.34			.47	.67		.91	T.									.21	.17	2.18		7.47
Millen ‖	Ogeechee			.85	.41	1.33	.71					.27	.05				.20		.25	.10						.30				.70	1.00	2.40		8.57
Mineral Bluff	Tennessee	.03	.55	.90				.17			.01		.07	.43	.21				.39			.04	.02				.57				1.35			4.74
Montezuma ‖	Flint	1.28	.27		.16						.06		.69							.19				.20		.67		.74		.12	.06	.96		4.65
Monticello ‖	Ocmulgee		.84	.94	.43						.68	.02			.08		.04	.17		.06	.83					.10	.67			.22	.16			5.98
Newnan ‖	Chat'ho'chee	.30	.50	.09	.11												.30		.05						.20			.21		.05	.09			1.90
Norcross ‖	do	.08	.22	.38	.06	T.			.04								.02		.88	.02		.06								.02	.08			1.86
Point Peter	Savannah	.24	.72	.54						.24								1.10	.70	.54					.12						.94			5.14

TABLE 2.—*Daily precipitation for August, 1911. District No. 2*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Georgia—Contd.																																	
Poulan	Suwanee	1.03									.36	1.35	.65			.42	1.70		.25	.20			.07	.80					.28	.05		.86	8.02
Putnam	Flint		.65				.35		.60	.10		.65	.60				.40								.70							4.05
Quitman	Suwanee	.35	.82	.51		.51			.82			.26	.46	.25	.17	.33	.41		T.		.70	.36	.16	.27	.11	.32	T.			.87	3.70	.93	12.31
Ramhurst	Coosa	.61	.26	.30				T.		.10	.12					1.77			.12		.08	.04				.10			T.	.09	.11	3.70
Resaca	do	.60	.25	.23				.32						.22	.30	.20		.20									.05			.27			2.64
Rome	do	.77	.10	.20	.05				.31						.60	.95		.10	.25	.10											.60		4.03
St. George	St. Marys		.38		.60	.09	T.		.88	T.		.25	.60	.55				.25			.08	T.	.43	.08	.86	T.			18.00	1.12	T.	24.17
St. Marys	do		T.	.05	1.25		.02	.28			.27	T.	T.						.02	.75	.03		T.					8.34	.35		.23	11.55
Savannah	Savannah		.23	.17	.24	T.	.09	.05	.35		.03	T.						.07	.06		T.	.58	.66		T.			.22	2.95	T.	.01	.06	5.77
Statesboro	Ogeechee		.18	.35	.20	T.	.19	T.		.04	.21	.21		T.				.92	.35			T.	T.	.11				.53	1.54	.56	.62	.32	6.33
Tallapoosa	Coosa	1.14	.26	.40	.90				.38				T.		.12	.15			.25	.23					.29					.04	.05		4.21
Thomasville	Ocklocknee	.14	.04	T.	.13			.01			.17	.01	.01		.01	.02	.04	.18	.20	.35	.35	T.	T.	.04					1.17	1.00	T.		3.87
Tifton	Suwanee	.47	.01		.10				.55		.56	1.34	.30			.40			.26					.51					.94		1.44	.03	6.91
Toccoa	Savannah	.45	1.55	1.09	.60	.15			1.10																			.37	.18	.11		1.15	.35	7.10
Valdosta	Suwanee	.25	.85	.40		.25	.40		.65		T.	2.25	1.30					T.			.40	.45	.25	T.	1.40				.45	1.50	5.40	T.	16.20
Valona	Ogeechee		.05	.07			T.	.26	.45	.90											1.20						.22	*	*	*	5.85	9.00
Washington	Savannah		.86	.21	.40		.17												.32	.43							.95			.62	.72	.08	4.76
Waycross	Satilla			.14	.35	.12			.20	.34	.05	.05	.40	.85	T.		.10			1.25			.33	.07	.05	.25		.02		1.15	2.48		8.20
Waynesboro	Savannah			.10	.12	.17	.20				.15		T.					T.	T.				T.		10	1.85				.35	1.60	1.20	5.84
West Point	Chat'ho'chee	.25	1.05	.23							.12		.31	.72	.30			.06	.72						.10					.14	.02		4.02
Woodbury	Flint	.35	1.95	1.01	.33	.05			.33		.14			.17	T.			.09		.04	.23						.14			T.	.04		4.87
Florida.																																	
Apalachicola	Coast	1.57		2.10	.60	.15			.57			2.80		.45							1.20	.16	.43									.11	10.14
Arcadia	Peace Creek	.04		.68		.26	1.20	.23	.90	.79	.22	.26	.02	.31	T.							1.15	.70	.10	.01				T.	.08	.05	.17	7.17
Archer	Waccasassa	1.26	1.28	.48	1.05	1.00	.52		.21	T.	.31	T.	T.	T.	T.			T.			.50	.97		.40	.10			.92		.82		.40	10.22
Avon Park	Kissimmee	.13	.12	.52	T.	.01		.05	.01		.56	.07	.22	T.	T.							.55	.65	.05					.03		.90	.06	3.93
Bartow	Peace Creek	.04	1.30		.08	.82		.16	.61	T.	.14	.61	.40	.45	.04	.29						1.04	.40	.27	.62				.30			.30	7.87
Blountstown	Apalachicola			.30		.46				.36			3.35	.30	.40		.15		.24		.27	.10	.15	.46	T.	.08				.08	.12	.05	6.96
Bradentown	Manatee	1.48		.80	.28			.58	.28	.22	.20	.38	.03	.09	.31							1.12	.50	.12	.42	.12					1.05	.12	8.10
Brooksville	Withlacoochee	.24		.40	1.62	.15		.53			.40	.20										1.30	3.26	.26							.10	.21	7.67
Carrabelle	Coast			.24	1.42		.24				.70	2.05				1.12				.20	.41								.24			6.62
Cedar Keys	do	.25		.90	2.55	.08	.30	.02		.04	.41	.22			.25						1.68	.62	.08			.19				.37	2.41	.78	11.15
Clermont	Lake	.15		.11	.40		.28		.33	.13	.85	.55									.70	2.25	1.35									.33	7.43
De Funiak Springs	Choctawhatchee		.30	.55	.10	1.93						.80	2.90	.30			.02	1.30		2.40	.20		.12							.09			11.01
De Land	St. Johns	.62	.46	.10	.20	1.15	T.	.22		.02	.12		.85		.10							.41	1.07							.04	1.80	.13	7.28
Eustis	Lake	.05	.55	.18	1.05	.49	.03	.33	.50	.22	1.35	.18		.10							.06		.49	.51		T.					.65	1.02	7.76
Federal Point	St. Johns	.09	.04	.04	.30		1.92	.34	.05		.47	.10	.04		T.						.59	.02		1.49		.24			.02	.88	.48	.42	7.53
Fenholloway	Fenholloway					3.10		.90	.80				1.12	.25	.63		.34			1.26			.18	.06	.11				.15	1.40	4.10	.89	15.29
Fernandina	Coast				T.	.81	T.	T.	.02	.10	.08	.16	T.								.12	.32							.06	7.60	.12	.03	9.42
Fort Meade	Peace Creek	.25	.23	.05	T.	.95	1.65	T.	T.	.14	.46	.32	.25	.35	.08		.46						.59	.90							.30	.10	7.08
Fort Myers	Caloosahatchee	.56	1.05	T.	T.	.34	T.	1.31	.59	.68	1.80	T.	T.	.47	T.							2.67	T.	.53	.62	T.				.57	T.	T.	11.19
Fort Pierce	Indian		.75					.20		.10		1.25	.10		.10							.10	.30					.20	.30			3.40
Gainesville	Lake	1.16	.23	1.24	.24	.27	T.		T.	.25	.02	.22	.22	.22							T.	.53		.35	T.	T.	.51	T.		.73	.55	1.25	.17	8.16
Grasmere	do	.10	.87	.79	.23	.43	.14	.44	.65	.23	.80	.22			T.							.05	1.25	.44				T.	T.		.89	.34	7.87
Hilliard	Nassau	.65	T.	.20	T.	.12	.77	.30			.47	.50	.40								.33		.45			.35			1.75	10.75	.35		17.39
Homestead	Coast	1.65		.01	1.02	.08		.13	.13	.40	.07	.65	.03		1.70								.30	.03	.01		.10		.16		.13		6.60
Hypoluxo	Lake	.41	.03			.99	*	*	*	*	*	*	3.03	*	*	*	*	*	*	*	.25					.09					.32		5.12
Inverness	Withlacoochee	.56	.03	.80	1.14				.09	.10	.03	.16			.15						1.03	.03	.11								.15	.26	4.64
Jacksonville	St. Johns	T.	.35	.19	2.50		.07	.27	.02	T.	1.46	.13	T.		.32		T.		.02	.03	T.	.83	.08	.07					2.12	.97	.05	.68	10.16
Jasper	Suwanee	.50	.25		.20		.15	.35	.95		.50	.30	.40							.85	1.25	.25		.83			.13	.23	.78	6.10	1.05	.28	15.35
Johnstown	do		.42	1.45	.21	.80	.99		.32		.90	.06	.35				.19			.47	.82	.04	1.27	.07					.50	3.75	.75	1.20	14.56
Key West	Coast	.64							.98	1.17	T.		T.	1.52	.02	1.38	T.		T.			1.12	.03	.03	.41	.46				T.	.12	.01	7.89
Kissimmee	Kissimmee	2.22	.82	.18	T.	T.	.14	.83		.16	.35	.10										.63	2.46	.30			.03				T.	T.	8.22
Lake City	Suwanee	.25	.05	.06	.36	.24	.03		.25	.40	.97								T.	.60	.10	.50		.15	.15	.48				5.00	3.00	T.	12.59
Macclenny	St. Marys	.05	.16	.25	.91	.04	.05	.50	1.36		.33	.42	.25		.31				.33		1.65		.74	.56					.40	8.60	.52	.30	17.73
Madison	Suwanee			.13		.11	3.02		.71			.68	.89	.40	.01	.49	.05	.37		.22	1.09	.09		.50	.11	T.	T.			2.44	2.15	.82	14.28
Malabar	Indian	.44				.05	1.30				.55	.05	.37			.09						.18	.20							1.22	2.60	.95	8.00
Marianna	Apalachicola			.07	.20			.16				.01	1.87	.79	T.	.13	.41	.01	1.34	.18	1.34	.77			.19	.27	.07				.03		7.84
Merritts Island	Indian	.01		.80	.23	.08	1.05		T.	.33	.82	T.		.28								.61	.85	T.				T.		.02	.50	.45	6.03
Miami	Coast	.05	.21			T.	.02	.76	1.35	1.10	.41	.03		T.	1.43						.14	.64	.01	.01		.03				T.	.08		6.27
Middleburg	St. Johns		.10	.11	.50	.15		.35	.50		.29	1.05	.28		.55		.04			.44		1.94	.32	.40	1.25			.30		1.85	.12		10.54
Molino	Escambia			.85				.20		.55		*	9.95							.45		.30		.95								14.80
Monticello	Aucilla			.11	.57						.23	.11				1.27		.58	.31	.34	.75		.58				.55		2.00	.45		7.85
Mount Pleasant	Apalachicola	.22		.04	.10				1.50		T.	.82	.08					.30	.30	.55	.04		.90	T.		.05			.50	.40	.06	5.86
New Smyrna	Coast			.30	.10	.24	.45	.12				.80				.65												.05			.60		3.31
Orange City	St. Johns	.72	.54	.18	.30	.80		.09	.06	.17	.31	.25			.27						T.	1.02	1.28							.20	.02		6.21
Orlando	do	T.	.10	.39	.25			.66	.25	.09	2.15	.03	.23		.10						T.	.54	.56	.05	T.						.05	.21	5.66
Pensacola	Coast		T.	.20	.44	.04		.01		.21		3.73	1.13	.42	.12	T.	T.	.03	.02	.02	.01	.23	.40	.03	.17								7.21
Pinellas Park	do	1.42	.17	1.73	.40	.02		.19	.36	.80	.50	.04	.35	.12	.24							.50	.67	2.05		.20					1.40		11.16
Plant City	Hillsboro		1.40	.55	.65	.21		1.12		.36	.20	.70	.10									2.00	.75								.11	1.18	11.23
Rockledge	Indian	.11	.53	.19	.03	.09	.50		.08		.65			.03								.40	.78								.28	.47	4.14
Rockwell	Withlacoochee	.90	.19		1.61		*	.38		.05	.07	.04									*	2.00	.29			.31		*	.02	.08		.04	5.98
St. Andrew	Coast		.54		.90				.29	.15	.29	2.00	4.00	.24		.03	.66	.60	1.26	1.61	.91	.11	.20	.02						.31			14.12
St. Augustine	do			.50	1.95		.15	.26			.40		.09							.18		.25	.12						.95	.63		5.48
St. Leo	Withlacoochee	.90	.09	1.61	1.09	.42	2.14	.66	.11	1.27	.16	.11		T.	.19							.84	1.13	.17		.05			T.			.11	11.05
Satsuma Heights	St. Johns		.42	.69	.10	.36		.05	.06		.64	.97	.16							.14	1.47	.74	.36	.22					.60	.54	.62	8.14
Tallahassee	Ocklocknee	.65	.68	.78	.38	.20			.05			.70	1.00							.08	.20	.02	.52	.08	.02	.38					3.50	.15	10.37
Tampa	Coast	.17	.05	.68	1.08	T.		1.25	.77	.11	.06			.08	.08		.12	.58	.28	.08	.20	.62	.75	.32	.04	.02		T.		T.	.63		6.71
Tarpon Springs	do	1.14	1.24	.66	1.96	1.26			.33	.48	.21	1.03	T.		.49	.02					2.38	1.15	.02	1.48							.07	.39	14.31
Titusville	Indian	.35	.01	.05	.12	.21	.49	.02		.06	.84	.02	.12	.01	T.						.42	1.69	.10	T.				.01		.07	2.66	.10	7.35
Wausau	Choctawhatchee	T.	1.46	1.65				.38		.61	.81	.10	.70					1.59	.49	.60	1.70		.15	T.				1.10		.04			11.38
Alabama.																																	
Alaga	Chattahoochee	.10	.48	1.52	.06	T.		.88		.04	T.	.71	.48	.78	T.		.34		.08	1.30	.74				T.	T.	T.				.26		7.77
Anniston	Coosa	.70	.05	.05	T.	.01		.02			.06	T.	.68	.09	.09		.07	.31	T.		.02			.29	.19	T.		.42	T.	.19	T.		3.24
Ashville	do	1.25	.77	.66		.12		.22					.50	.08				2.65	.80		T.			.01	.15	.35				T.			7.56
Auburn	Tallapoosa	.40	.75	.01							.12		T.	2.08	T.	.12		T.	.07	.53	.01			T.						.15	.10		4.34
Benton	Alabama	.72		1.24								.04		.02	1.10	.82			.05		.48												4.47
Bermuda	Escambia	.36	.68		1.31			T.			T.	.04	3.01	.31		.86	.10	T.	T.	T.	.13	T.			.05		T.						6.85
Birmingham	Bl'k Warrior	.03	.17			.05	T.	T.		.41		.13	.16	.15	.32	T.	T.	.59	.04		.05				T.	T.							2.10
Calera	Coosa		.28	.02			.80		.10				.10	.22	.99	.06										.98			.03			3.58
Camp Hill	Tallapoosa	.35	1.25	.84						.05		.08	.60		.43		1.16	.20	.52										T.			5.48

TABLE 2.—*Daily precipitation for August, 1911. District No. 2*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Alabama—Contd.																																	
Cedar Bluff	Coosa	.25	.80	.60												1.10			1.40														4.15
Citronelle	Alabama	.03	.15			.03		.01				.02	4.12	1.30	.05		.02	.01	.41	.05	T.		.22		.92	.01							7.35
Clanton ‖	Coosa	.05	.36	.16			.20		.13				.15	.33	.82											.05					.03		2.28
Cochrane ‖	Tombigbee		1.20					.20					.30		.80	.10			.15	1.95		.70										5.40
Cordova	Bl'k Warrior	.73	T.			.09	.11	.55	.58			.21	.31	.17	.39		1.33	.90	.10		.21				.25				.23				6.16
Cullman	do	1.06	.91	.01		.67		.14		.60			.09	.24	.22		.24	.36	.15	.05	.26				.44	T.							5.44
Dadeville ‖	Tallapoosa		1.20	.05	T.				.68				.07	.96	.28	.24			2.45	.05					.07								6.05
Daphne	G. of Mexico	.45	.07			T.		T.		.85		.21	2.20	.45	1.05	T.			.10	.10			.05	1.20	.94	.09							7.76
Demopolis ‖	Tombigbee	1.00	.50	.02								.05	.37	1.12		.19		.02		.05						.67							3.99
Eufaula ‖	Chattahoochee	.02	.18	.14	.14	.04					.68		T.	.22	.06		.56	.10	T.	T.	.28				T.					.14	.02		2.58
Evergreen ‖	Escambia		1.70	.28					.12				1.24	1.12	.84			.84	.12	.41	.54	.18											7.39
Flomaton	do	.04	.08								T.	.10	.14	2.68	T.	.69	.14	T.		2.08	.04	.14	T.	T.	.03				T.				6.16
Fort Deposit ‖	do	.20		.55		T.							.40	.50	.70		.10				.30												2.75
Gadsden ‖	Coosa		.54	1.74	.12				.24					.30	.34	.12				.32		.04			.14				.20				4.10
Goodwater ‖	do	.19	.78	.19	2.00									.54	.40	.20																	4.30
Greensboro ‖	Bl'k Warrior		.88	.08									.37	.90	.23	.41				.09	.73					.32				.41			4.42
Greenville ‖	Escambia		.56	2.24									.43	.49						.27					.34						.32		4.65
Hamilton	Tombigbee	.18		.76			.69						.20	.05	T.	.05			1.17		.55								1.00	.29			4.94
Highland Home	Escambia	1.10	.17	.65								.21	.35	.25	.02			.50	.05	.10	T.				.05					.44			3.89
Livingston ‖	Tombigbee		.38										.59	1.21						.15						.20		.10					2.63
Lock No. 4	Coosa	1.35	1.75	.05		.08					.30	.08	.47	.50		.20		.50						.61						.15			6.04
Maple Grove	do		.17	1.10	.20		T.		.19	T.		.26	T.	T.	.70	1.01			T.	.26		T.			T.	.13	T.	.19		.47	T.		4.68
Mentone ‖	do		.25	1.25							.23	.70			1.31	.05		.61													T.		4.40
Milstead ‖	Tallapoosa		.50	1.20									T.	.40	.70	.20									.18	.20							3.38
Mobile	G. of Mexico	.08	.28	T.	.05	.01	T.	.25		.39		.84	3.94	.14	.21	.09	.03	.08	.21	.61			T.	T.	1.60								8.81
Montgomery	Alabama	.60	.22	.80	T.	.01		T.		.24		.12	.22	.63	.55			.57		T.				.01	.06	.01			.05	T.			4.09
Newbern	Bl'k Warrior	.52	.05					.02				.40	1.00	.61	1.35				.07	.01	.37				.11	T.			.14				4.65
Oneonta	do	.40	1.08	.28		.10		.30		.12	.37	.03	.20	.25	.04	.20			.30		.18			T.	.09	T.	.07						4.01
Opelika ‖	Tallapoosa	.10	.51	.35							.09		.08	.64	.85	.05		.05	1.50	1.10					.17				T.	.10	T.		5.99
Ozark ‖	G. of Mexico	.10	.35							.35		.50	.60	.55					1.60					.12						.25			4.42
Prattville	Alabama	.48	.83	T.	.21	T.		.40		.04	T.	.03	.20	1.10			T.							.86	T.					.16			4.31
Pushmataha	Tombigbee	1.17					.38					.13	1.62	.57	.57					.39	.45		2.22		.14	T.	T.						7.64
Selma ‖	Alabama	.56	1.24	.30			.02		T.				.30	.19	.08	.35			.02	.32	.02	.06				.01				T.			3.47
Spring Hill ‖	Gulf of Mexico		.12	.50		.80		.18					3.70	1.71	.37	.15	.76	.35	.11	.30	.25	T.	T.	T.		1.30				T.			10.60
Talladega	Coosa	1.40	.11	.92	T.	.38		.11		T.			.30	.10						1.20		.20							T.	T.			4.72
Tallassee ‖	Tallapoosa	.01	1.05	.20	.06	.02			.66				.45	.33	.62	.06			.05						.16	.24					T.		3.91
Thomasville ‖	Tombigbee	.60	.76	.15					T.				1.91	2.01		.14	.58	.08	T.	.28	.14	T.	T.			.02							6.67
Troy	Escambia	.52	.65	.01						.35		.24	.45	.67	.32	.18	.01	.05	.02	.05	.01				T.				T.	.04			3.57
Tuscaloosa ‖	Black Warrior		.53										.05	.40	.08	.53	.02			.27		.11				.02	T.			.06			2.06
Tuskegee	Tallapoosa	1.85	2.22					.26					.04	.68	.57																		5.62
Union Springs ‖	do		1.09	1.02	.04						T.		.54	.31	.09		T.		T.	.36	.26									T.			3.71
Uniontown	Black Warrior	.61	.21									.17	1.10	.08	.46	T.			.04		.20				.06								2.93
Valley Head	Coosa	.05	.30	T.		T.				.23	.40	T.	.55	.40					1.00	.45					T.		T.		T.	T.	T.	T.	3.38
Wetumpka ‖	do		1.53	.75	.55						.37		.11	.17	1.21	1.16									.30								6.15
Mississippi.																																	
Aberdeen ‖	Tombigbee	.40	.72										T.	.46		.76			.52	1.00	.26			.93				.25	.45	.10	T.		5.85
Agricultural College.	do	.25	T.				.10					.20	1.30	.20	.15	1.35		T.	.60	.30	T.		T.				.10	.30	.25		T.	T.	5.10
Bay St. Louis	Coast	.14	1.99			.07		.29	.63	.38	1.01	.02	1.19	1.69	.06	.04	.05	.11		.37	.56		.11	.28	.19		T.						8.58
Biloxi	do	T.	1.07			.67	.03	.15		.11	.63	.01	.50	.47	.12	.03		.11		.03	.01	.46	.01	T.	.56					.05			5.02
Booneville	Tombigbee	.94	.21		.67	.99	.17					T.	.12	.40	.42	.10		T.	1.62				.18			.30	.05	.02					6.19
Brookhaven ‖	Pearl	T.	.58	.06			.20				.50			.54	.05	.38	.69	.07	.45	.86	1.08	.09	T.	.59	.04								6.18
Columbia ‖	do	T.	.43	.17			.10						.68	.56	.09	.83	.63	.43	1.08	.61	.08	T.		.43	.08	.07		.28	T.	T.			6.55
Columbus ‖	Tombigbee	.20	T.					T.					T.	.71	T.		.15		T.	1.38		.79		T.			1.38	.10	T.			4.71
Crystal Springs ‖	Pearl		.17	.03								.24	.03	1.30		.65	.09		.34		1.23			.33			.12					4.53
Edinburg	do	2.22										.22	1.42	1.04	2.00	.29		T.	.80		.18		.02					.17	.11			8.47
Enterprise ‖	Chic'sawhay	1.45	.47										.60	.20	.03		.01			.75	.35			1.00		.02						4.88
Fulton ‖	Tombigbee	.48	.40	.15			T.	2.45						.35		.60	1.10			.60	.26		.15	.23			.36	.18	.04			7.35
Hattiesburg ‖	Leaf	.22	.54	.28								T.	.32		1.26		.14			.20												2.96
Hazlehurst ‖	Pearl	T.	.56			.02							.03	1.03	.02	.84	.21		.40		.66	.04	1.44						.05			5.30
Hickory ‖	Chic'sawhay	2.43					.04					.16	1.10	.36		.11			.74	.07	.86		.9				.08		.02			6.76
Jackson	Pearl	.74	.16								.64	.07	.43	2.06	.02		.09		.22	.02	.58		.15	.04			.04	.02	.39			5.67
Lake ‖	do	.25	1.42										.40	1.54	.40	.45	.20			.40		T.		.12				.70		.60		6.48
Lake Como	Leaf	.34										.15	.98	1.43	.02	1.25	.09	.16	.46	T.	.24		T.		T.		.40					5.52
Laurel	do	2.00	.05							T.		.02	.76	1.38	.03	.02	.01	1.60	.35	.08	.10		.45		.04		.01					6.90
Leakesville ‖	Chic'sawhay		.33	.29					.31			.26	.81	2.00		.96	.49		1.80													7.25
Louisville	Pearl	.81										.46	.47	.15	.63	.25		.29	.05		.05		.15				.20	.13				3.69
McNeill	do		1.95			.15					T.			.80	.08	T.	T.			.85	.62	T.	1.07	.26	.56			.18	.05			6.57
Macon ‖	Tombigbee		.15		.07		T.						.20	.94	T.		.30		.36	.72	T.	T.		T.		.03		.07	.06	T.			2.90
Magnolia	Pearl	1.97	.45									.09	.31	.06	.41	.02	T.	.92	1.77	.22	.91		.49	.19	T.	T.	.23		T.				8.04
Meridian	Chic'sawhay	.52	T.					.33				.08	.84		.08	.49	.94			1.27	T.		T.		.24		.44		T.				5.23
Merrill ‖	Pascagoula	.10	1.20	1.00									.44	1.16	.20	.40	.14		.10	1.20	1.70			.10		26							8.00
Monticello	Pearl	.25	.09	T.						.15			.05	.39	.22		1.80	.30	2.00	.14	.43	.01	.14	T.	T.	.03			.09				6.09
Okolona ‖	Tombigbee	1.25	.15		.08			.15						.32	.17	1.23	.10			1.18	.56		.08	.05				.10	2.31	.28			8.01
Pascagoula	Coast	.70			.02		.02			.59		.01	4.05	1.32		.94	.67	.14		.72	.38		.12	.23	.68	.20	.01						10.80
Pearlington	Pearl									.60	.14	.05	.41	.37				T.		1.04	1.14	.41	1.20	.13	.21		.03	T.	T.				5.73
Porterville	Tombigbee	.32	.23	.46	T.		T.					.10	.79		.23	.91	.10		.13		1.54		.62		.02		.18						5.63
Shubuta ‖	Chic'sawhay	.32	.46										.90	.23				.32		.21	1.02							.36					3.72
Tupelo	Tombigbee		.16	T.		.02	1.06							1.14	T.	.27	T.	1.68		.40		.19					.02	.32	.24				5.50
Waynesboro ‖	Chic'sawhay	1.18	.55	.10					T.				.90	1.20	.05	.22	T.	1.20	.18	.10	T.	T.		T.	T.	T.	T.	.42		T.	T.		6.10
Woodland	Tombigbee	.21					.19					.07	1.09	1.21	.17				1.88		.04		.07						.62				5.55

* Precipitation included in that of the next measurement.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations, August, 1911. District No. 2, South Atlantic and east Gulf States.*

Date.	Virginia.								North Carolina.																Charleston, S. C.	
	Lynchburg.		Norfolk.		Richmond.		Saxe.		Charlotte.		Edenton.		Fayetteville.		Hatteras.		Newbern.§§		Raleigh.		Reidsville.		Salisbury.		Wilmington.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	89	67	89	70	93	66	96	69	90	69	90	72	92	69	87	73	91	65	90	67	96	64	91	68	87	70	85	74
2....	89	65	90	71	93	70	96	67	90	69	88	75	94	66	86	74	92	65	90	68	93	66	93	67	87	72	85	76
3....	84	70	89	73	93	70	88	73	82	69	90	76	95	69	86	74	94	66	87	68	90	67	82	68	87	74	86	78
4....	84	69	84	68	85	70	83	72	86	70	88	73	81	70	85	74	81	68	76	68	84	69	86	69	84	69	83	74
5....	84	68	82	71	84	70	89	73	89	70	86	75	93	70	81	71	88	67	88	69	89	65	93	67	84	70	87	76
6....	84	70	80	72	82	70	90	74	87	68	88	75	91	70	83	73	80	67	87	69	88	67	90	66	88	71	88	75
7....	88	68	80	72	87	67	92	73	89	70	89	74	92	70	83	74	88	69	86	72	90	69	91	66	83	72	89	75
8....	94	68	84	70	89	66	93	72	93	70	90	76	95	69	84	72	89	63	90	68	.....	.....	96	70	85	68	88	74
9....	96	70	91	70	93	70	93	73	97	73	90	75	98	71	85	71	92	65	92	70	.....	.....	102	72	87	70	86	74
10....	92	68	90	72	93	66	95	69	92	68	92	78	95	65	88	74	93	62	90	66	.....	.....	94	62	89	68	84	74
11....	98	69	93	73	97	71	98	69	90	71	95	80	97	70	87	77	95	67	92	72	.....	.....	96	71	92	73	87	76
12....	87	74	84	74	80	74	87	65	93	72	93	82	99	71	89	80	96	68	94	73	.....	.....	98	71	92	74	89	76
13....	92	68	88	72	92	68	95	73	90	69	92	78	100	73	88	78	94	71	94	73	.....	.....	97	67	92	74	89	76
14....	90	68	86	72	89	69	94	70	93	71	91	71	100	71	90	76	94	68	92	69	.....	.....	97	69	93	70	92	77
15....	88	71	89	70	89	70	90	70	92	72	82	67	96	71	87	76	91	67	90	69	.....	.....	95	71	90	73	92	77
16....	89	70	88	72	90	70	92	72	93	72	88	68	95	71	91	76	91	67	91	71	.....	.....	96	69	91	74	94	76
17....	96	66	94	71	97	70	97	61	97	69	93	67	99	71	89	76	94	63	96	71	.....	.....	99	63	94	74	94	77
18....	88	70	86	70	88	67	96	63	90	73	92	74	95	71	87	76	95	70	90	74	.....	.....	93	62	93	71	94	77
19....	84	62	81	70	83	62	88	66	91	70	84	65	95	69	81	70	89	66	86	68	.....	.....	94	66	84	71	88	73
20....	79	62	77	70	79	63	82	64	85	65	83	67	87	67	77	70	75	60	80	65	.....	.....	86	65	78	65	86	72
21....	80	60	77	68	81	62	86	52	81	63	79	64	82	67	77	63	76	63	78	64	84	61	84	64	77	66	82	70
22....	83	56	78	69	86	58	90	60	86	62	81	61	89	62	83	70	82	61	85	60	90	56	90	60	83	65	82	68
23....	92	58	88	68	92	65	93	69	88	65	88	66	93	66	85	71	90	64	89	67	98	64	93	59	88	70	87	76
24....	92	65	91	72	92	66	93	73	90	70	89	71	93	71	86	76	92	67	91	70	96	66	94	68	88	72	85	78
25....	88	71	90	74	92	73	93	70	90	72	90	70	94	71	84	77	93	67	91	73	92	70	92	71	89	74	86	79
26....	87	69	91	73	92	70	92	72	91	70	91	72	93	69	86	76	90	66	90	70	91	66	94	70	86	70	90	74
27....	88	69	87	75	87	70	91	72	87	69	90	72	93	73	86	80	89	70	87	72	90	68	91	69	82	71	80	71
28....	89	72	90	76	90	72	89	74	82	69	90	74	89	74	86	78	89	73	88	74	90	71	89	71	84	79	82	71
29....	85	64	90	74	90	67	88	75	87	68	90	70	85	71	85	74	93	70	86	71	84	70	90	70	84	77	83	69
30....	65	59	84	72	69	63	75	65	82	70	87	74	86	70	84	74	89	71	81	69	71	63	89	68	84	74	84	77
31....	74	59	85	66	71	62	72	65	81	65	86	74	88	70	82	73	86	69	83	70	74	59	83	63	84	74	85	78
Mns..	87.0	66.6	86.3	71.3	87.7	67.6	90.2	68.9	88.8	69.1	88.5	72.1	92.7	69.6	85.1	74.1	89.4	66.6	88.1	69.4	88.3m	65.6m	92.2	67.2	86.7	71.5	86.9	74.8

Date.	South Carolina.														Georgia.											
	Columbia.		Conway.§§		Ferguson.§§		Georgetown.		Greenville.§§		Newberry.		Society Hill.		Albany.§§		Atlanta.		Augusta.		Dahlonega.		Macon.		Rome.§§		Savannah.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	89	71	89	65	92	70	90	70	83	68	92	72	91	68	96	72	83	67	91	72	81	65	87	70	88	67	87	71
2....	88	70	85	67	88	71	90	69	84	66	86	69	91	70	92	71	80	66	89	72	78	65	88	70	85	69	86	74
3....	87	71	87	63	84	60	94	68	78	67	87	71	86	69	91	71	82	67	87	74	84	68	89	72	86	69	87	73
4....	89	72	81	74	84	75	94	68	85	70	89	72	81	69	90	73	86	68	87	74	85	67	88	72	89	68	84	73
5....	90	71	90	69	89	69	91	72	89	67	92	70	87	69	96	73	89	69	90	72	89	64	90	71	93	69	89	71
6....	93	68	93	69	92	71	91	74	84	65	93	68	87	71	97	74	91	72	91	72	89	64	93	71	93	67	92	71
7....	89	72	87	71	87	70	88	74	86	67	90	70	85	68	96	73	91	70	90	74	85	66	93	74	94	68	90	73
8....	93	70	89	69	93	69	89	69	91	70	95	70	88	71	95	74	92	69	94	73	93	65	94	72	97	66	87	71
9....	96	70	91	68	95	70	88	68	95	71	99	72	91	67	97	74	96	74	93	72	95	71	93	72	98	68	88	73
10....	91	70	92	70	92	72	91	74	91	67	92	69	89	69	94	71	90	70	92	70	89	67	91	70	95	69	86	74
11....	90	71	92	72	90	70	93	71	90	68	93	70	91	71	88	70	86	69	89	73	89	69	89	70	92	69	86	76
12....	94	70	94	70	95	69	98	71	91	68	95	69	92	73	90	71	83	68	92	71	88	66	89	70	88	70	88	73
13....	94	73	95	73	95	71	92	74	94	68	96	70	94	74	93	72	88	69	94	73	89	66	90	74	89	70	90	73
14....	92	74	94	72	96	73	95	74	94	69	97	72	94	73	96	71	88	72	93	74	89	67	91	74	91	69	90	74
15....	92	73	95	72	95	72	95	74	93	67	97	70	94	72	94	73	89	72	92	73	91	66	91	73	91	70	93	74
16....	95	75	92	74	94	73	93	74	93	68	98	73	92	73	94	73	88	72	90	73	91	65	88	71	92	71	93	73
17....	96	74	96	71	95	73	94	74	96	67	98	72	95	75	94	74	86	71	96	73	92	67	91	71	93	70	94	74
18....	93	74	97	74	96	70	95	74	90	68	94	74	94	69	94	73	82	70	90	74	84	68	90	72	84	71	90	72
19....	91	70	90	71	92	69	92	74	93	63	94	69	87	70	89	72	89	70	93	72	86	67	90	70	92	70	91	71
20....	86	64	84	72	89	73	90	74	86	60	90	69	80	65	90	72	80	69	86	71	80	66	83	68	85	68	93	71
21....	80	63	81	64	82	63	80	64	85	63	95	62	81	61	88	70	82	63	84	65	81	62	83	66	88	60	80	66
22....	83	65	88	64	86	66	92	74	86	59	86	63	81	65	88	67	83	63	86	65	80	63	84	66	87	62	82	66
23....	88	65	88	67	91	67	94	74	89	56	86	62	87	70	88	68	83	66	89	69	84	60	86	70	89	62	88	70
24....	90	72	88	69	90	68	92	72	91	57	92	69	88	70	92	67	87	67	89	71	88	65	90	70	90	65	87	75
25....	90	72	92	69	91	69	95	74	91	65	92	72	90	70	93	72	88	69	92	72	89	65	91	72	94	66	88	77
26....	90	71	91	68	91	68	90	74	92	68	93	72	90	70	91	71	90	70	90	71	89	64	93	73	96	70	91	72
27....	87	71	87	69	90	70	84	72	91	68	92	71	84	70	94	73	90	70	91	71	86	66	92	72	98	68	86	74
28....	81	69	84	70	80	70	84	69	83	71	84	70	84	69	92	75	87	70	84	70	89	68	85	72	95	70	80	71
29....	84	71	86	78	87	69	82	69	75	70	80	70	87	70	83	74	73	68	76	70	79	68	75	71	85	72	81	73
30....	78	71	86	74	84	64	88	74	75	68	77	71	85	72	90	75	78	66	76	71	73	67	86	71	78	67	82	73
31....	87	73	86	75	86	72	88	75	85	66	88	72	85	71	91	74	81	68	85	72	79	68	89	74	85	69	86	73
Mns..	89.2	70.5	89.4	70.1	90.0	69.5	90.6	72.0	88.0	66.3	91.4	69.8	88.1	69.8	92.1	72.0	85.8	68.8	89.1	71.6	85.9	66.0	88.8	71.1	90.3	68.0	87.6	72.4

TABLE 3.—*Maximum and minimum temperatures at selected stations, August, 1911. District No. 2*—Continued.

Date.	Georgia.						Florida.																			
	Thomasville.		Waycross. §§		West Point. §§		Avon Park.		Fort Myers.		Gainesville.		Jacksonville.		Key West.		Miami.		Monticello.		Orlando.		Pensacola.		Tallahassee. §§		Tampa.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	89	70	93	70	90	69	89	72	90	72	90	71	87	73	83	74	84	74	90	69	86	70	86	77	86	70	90	71
2	86	71	95	70	82	69	87	72	85	72	90	70	86	74	86	75	89	78	87	61	92	70	86	77	80	71	87	71
3	88	69	92	72	88	70	88	71	87	72	88	71	88	73	88	77	90	76	88	70	88	73	86	75	81	71	86	71
4	88	72	88	73	89	71	87	70	88	73	82	74	82	72	89	79	90	74	87	72	82	73	87	74	89	71	79	70
5	95	71	94	72	93	70	90	72	87	74	89	71	91	72	88	79	90	74	93	71	.....	.....	89	75	91	70	86	75
6	95	71	97	70	96	69	91	73	87	74	93	71	91	73	90	78	90	75	95	70	.....	.....	90	74	90	71	89	77
7	97	71	96	71	94	71	91	72	87	74	95	71	92	73	88	80	91	72	95	71	94	73	92	76	94	72	86	72
8	94	71	94	71	95	71	93	72	89	74	92	71	87	72	84	73	87	71	94	71	89	73	96	74	92	71	90	71
9	94	72	93	70	99	74	89	74	85	72	90	73	88	73	81	73	87	73	94	72	90	74	93	72	91	73	90	72
10	87	72	88	73	92	71	86	72	76	70	89	74	87	70	87	80	88	74	94	72	88	72	90	74	88	73	84	73
11	85	71	92	71	89	73	88	71	90	72	88	71	89	73	89	80	89	75	83	70	88	70	78	71	79	70	90	72
12	90	72	89	69	82	71	88	76	90	74	89	71	89	77	83	79	89	78	92	72	87	75	81	71	84	70	89	74
13	92	71	93	70	90	70	91	75	90	74	91	71	90	77	89	70	88	80	93	72	92	73	83	74	88	72	92	75
14	92	72	92	70	91	68	85	72	85	72	92	72	88	75	87	72	87	67	94	72	88	72	85	73	90	73	87	74
15	88	71	93	72	91	71	93	73	90	73	93	72	91	74	86	70	89	80	89	71	95	75	86	73	82	72	90	74
16	90	72	92	70	91	72	94	73	89	74	93	72	91	76	87	77	89	80	89	71	97	72	86	75	83	71	91	75
17	90	72	94	72	95	71	96	71	90	74	92	72	92	75	88	79	88	78	88	79	95	72	83	74	84	71	91	74
18	87	71	90	72	90	71	95	70	91	74	93	71	91	75	88	76	89	72	91	71	94	71	87	78	87	73	90	73
19	88	71	93	71	89	69	95	68	90	73	89	69	89	74	89	78	90	71	90	72	93	70	89	75	83	73	90	75
20	90	69	95	73	82	68	93	67	89	73	80	73	86	74	89	78	90	74	96	71	88	74	90	74	84	73	87	76
21	89	68	88	69	85	64	81	70	80	72	87	70	85	69	89	72	89	72	89	68	85	73	85	72	88	68	85	70
22	87	66	86	66	83	65	89	69	84	70	81	68	84	69	87	75	89	74	89	65	87	67	82	72	85	66	84	66
23	85	67	92	67	84	65	91	70	91	73	89	68	89	69	88	79	89	74	84	66	92	67	82	71	80	67	92	69
24	91	67	92	69	90	66	92	74	89	74	90	69	88	73	89	74	89	82	91	67	92	73	85	74	87	68	92	72
25	93	71	93	71	92	68	91	76	90	76	90	74	89	76	89	77	87	80	93	72	93	74	86	75	88	69	93	75
26	94	71	96	69	95	70	94	72	90	73	92	71	91	72	88	78	93	74	94	71	94	71	87	77	90	72	91	73
27	97	73	92	72	95	70	95	71	90	74	91	72	91	74	89	78	91	76	96	72	93	71	89	77	92	73	89	77
28	95	74	82	77	95	73	91	75	89	75	90	75	83	72	89	77	91	74	90	70	88	77	94	76	91	74	88	79
29	82	74	79	67	83	73	90	74	88	73	83	70	79	75	86	78	89	79	85	72	87	77	89	76	86	74	85	77
30	85	73	85	69	87	71	91	72	85	73	83	76	85	75	88	75	89	74	86	72	92	75	84	71	84	73	84	72
31	84	74	89	72	89	70	91	73	87	74	.....	71	88	72	89	78	90	78	87	72	92	72	86	72	84	74	90	73
Mns.	89.9	71.0	91.2	70.6	89.9	69.8	90.5	72.0	87.7	73.1	89.1[a]	71.5	88.0	73.3	87.6	76.4	89.0	75.3	90.5	70.3	90.4[b]	72.4[b]	86.8	74.2	86.5	71.3	88.3	73.2

Date.	Alabama.																Mississippi.							
	Anniston.		Bermuda.		Birmingham.		Eufaula. §§		Mobile.		Montgomery.		Tuscaloosa. §§		Uniontown.		Columbus. §§		Hattiesburg. §§		Jackson.		Meridian.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	86	68	86	68	84	70	92	69	88	75	86	69	89	71	87	70	84	70	90	70	92	69	85	69
2	83	67	85	69	84	68	86	69	86	72	85	70	88	70	86	70	87	70	88	68	82	70	85	69
3	86	68	90	71	86	67	88	70	88	70	86	71	90	69	88	71	90	69	93	66	92	68	89	67
4	88	67	93	69	90	69	87	69	91	75	87	71	95	69	93	69	95	68	97	70	94	68	92	68
5	89	67	94	70	91	70	92	69	94	74	91	71	97	70	94	72	95	68	98	67	95	70	94	71
6	90	66	97	68	91	67	93	70	93	72	94	70	93	70	93	60	94	71	99	70	94	71	94	70
7	90	69	95	78	92	68	94	69	93	73	92	74	98	73	96	59	96	70	97	73	94	71	93	70
8	92	65	97	70	93	68	95	70	96	74	94	71	99	70	98	67	98	70	99	72	96	70	95	72
9	94	71	97	74	93	68	93	71	95	72	96	72	99	70	99	74	99	70	99	74	98	72	95	74
10	92	70	94	70	94	73	90	68	96	72	93	72	102	74	97	63	100	72	98	71	98	74	95	74
11	89	72	82	73	88	71	84	69	83	72	86	73	89	71	91	71	92	72	88	70	91	72	85	72
12	81	71	73	69	76	71	83	70	82	74	76	72	78	72	75	71	77	72	91	72	78	72	76	69
13	88	70	80	69	85	70	87	69	83	74	86	69	86	72	83	71	87	72	86	72	86	74	82	72
14	90	70	88	71	85	70	90	67	82	72	90	70	88	70	88	70	90	72	92	68	90	72	86	72
15	88	71	91	69	86	71	89	68	86	74	88	70	92	71	89	71	87	73	96	70	88	73	89	72
16	91	71	90	69	86	72	89	69	87	74	91	72	93	72	93	71	95	70	94	68	94	73	89	70
17	91	68	91	71	89	70	86	70	88	76	91	72	95	71	91	63	93	70	90	71	93	72	90	70
18	82	72	88	71	77	71	90	71	89	75	86	73	84	73	87	71	77	72	88	72	93	73	83	72
19	88	69	88	73	87	69	86	71	91	74	90	72	92	72	89	72	90	72	80	68	94	73	88	71
20	85	65	89	71	85	68	85	69	92	75	87	73	89	72	88	71	88	71	92	66	92	70	84	70
21	84	60	90	69	87	65	87	65	92	73	88	70	91	68	90	71	90	68	94	68	93	68	88	69
22	84	64	87	66	86	67	85	63	86	74	86	68	88	68	87	69	85	68	96	70	80	70	82	69
23	84	63	88	65	87	67	85	64	89	71	87	68	91	69	88	66	91	66	93	68	90	68	86	67
24	87	67	88	67	86	69	90	65	84	70	88	68	92	69	88	60	92	67	90	66	90	67	87	66
25	88	67	92	66	87	70	91	68	87	71	92	69	91	69	90	67	91	70	96	70	92	70	89	69
26	90	68	94	67	91	71	93	68	88	74	94	73	94	71	91	70	95	72	98	71	91	72	90	71
27	89	70	95	68	91	71	94	69	88	75	94	74	96	71	94	70	92	71	96	72	95	73	90	71
28	92	70	98	71	90	71	96	72	94	74	93	75	96	71	94	72	91	71	90	71	92	72	89	71
29	84	69	91	.....	84	67	89	72	89	75	90	73	84	72	85	73	79	69	88	68	84	72	78	68
30	80	67	87	67	76	65	90	71	87	70	82	68	80	66	78	68	76	67	86	68	85	63	78	63
31	82	64	92	64	83	65	91	68	88	70	84	70	85	68	82	70	86	67	94	66	88	67	79	66
Means	87.3	67.9	90.0	69.4[a]	86.8	69.0	89.4	68.8	88.9	73.1	88.8	71.1	91.1	70.5	89.4	68.8	89.7	70.0	92.8	69.5	90.8	70.6	87.3	69.8

[a], [b], [c], etc., indicate respectively, 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning, the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 3, OHIO VALLEY.

FERDINAND J. WALZ, District Editor.

GENERAL SUMMARY.

The most noteworthy features of the weather conditions over the Ohio Valley during August, 1911, were: First, the oppressively warm weather prevailing during the greater portion of the first and second decades, and especially the intense heat and record-breaking high temperatures of the 10th and 11th; second, the unusually cool weather largely prevailing after the 17th, especially the remarkably low temperatures of the 19th–21st and the 29th–30th; third, the generally heavy rains of the last week, especially over the upper half of the Ohio River watershed.

The month began with cool, showery weather over much of the district, the rains being sufficient during the first few days to bring relief in many localities from the fearful drought prevailing for so long a period. The rains decreased and the temperature increased, however, after the 3d, until on the 10th and 11th rains had ceased and the temperature on those two days reached 100° and over in a majority of the States in the district. August records for heat were broken in several States, and in two, Indiana and Kentucky, new State records for August high temperatures were created. Following the 11th, while the weather continued oppressively warm until the 18th, the temperature was not so high and daily showers were again somewhat frequent, although the aggregate rainfall was mostly small. Clear and unseasonably cool weather during the 19th–22d was followed by general rains lasting practically from the 23d until the end of the month, the temperature for the most part being below normal during the same period. These general rains were timely and greatly beneficial, reviving pastures, thoroughly soaking the soil which had become dry and parched, and saving late crops from almost utter failure in many localities, besides replenishing the rapidly failing water supply.

Thunderstorms were frequent, but not more so than is usual in August. They were attended in some localities by damaging wind squalls, hail, and excessive rainfall. In the main, however, damage was local and of minor importance.

TEMPERATURE.

The temperature for the month, as a whole, averaged above normal over the eastern and most of the central portions of the district, the greatest excess, +3° to +5°, occurring in the Appalachian sections of the district. It was below normal −1° to −2° at most stations in the extreme western portions of the district and in west central Kentucky.

The cool weather prevailing during the latter part of July continued during the first two or three days of August, except in the more easterly portion, where a warm wave had already set in on the last day of July. This warm wave had extended to nearly all the district by the 4th of the month and to the whole district by the end of the first week. It continued until the 17th, and during the time that it prevailed maximum temperatures of 90° and over were registered almost daily in all portions of the district, except at the more elevated stations in southwestern Virginia and western North Carolina, and even in those favored sections the temperature registered unusually high. The mean daily temperatures ranged from 2° to 11° above normal. Fortunately, however, local thunderstorms were of rather frequent occurrence during much of this period, which gave temporary relief to the oppressive heat in various localities.

Immediately following the breaking up of this remarkable hot spell, brought about by the movement eastward of a strong area of high pressure across the Lake Region about the 18th to 20th, cool weather set in and practically continued during the rest of the month. Light frosts occurred at several stations in the mountain sections, and also in one or two of the more northerly States of the district, on several dates. It was quite warm, however, on the 27th, when the mean temperatures ranged from 4° to 10° above normal. Also, the cool weather did not extend over so long a period in the more easterly sections of the district—that is, in West Virginia, southwestern Virginia, western North Carolina, and the eastern portion of Tennessee—where from the 24th to the 28th, inclusive, the mean temperature was above normal. The periods 19th–21st and 29th-31st were remarkably cool. On the mornings of the 20th and 21st minimum temperatures in the 40s were registered in all the States of the district, except the northern portions of Georgia and Alabama; 39° was registered in Ohio and 37° in the western portions of New York, Pennsylvania, and Maryland. While unseasonably low temperatures were again experienced in the period 29th–31st, they were not as low as during the previous cool wave, except in Illinois and Indiana, where the lowest temperature of the month was registered on the 30th—42° in Indiana and 46° in Illinois. The leading temperature condition of the month was the intense heat which obtained on the 10th and 11th, when maximum temperatures of 100° and over were registered at a large number of stations in a majority of the States composing the district. A maximum temperature of 107° was registered at Rome, Ind., on the 10th, which is not only the highest temperature on record for August in Indiana, but is probably the record high temperature for August for the entire Ohio Valley. At Bardstown, Ky., the temperature on the 11th reached 106°, 1° higher than any previous record in that State. It reached 105°, the previous high record for August, at several Kentucky stations on both the 10th and 11th. August high temperature local records were equaled or broken at many

stations in Kentucky, Indiana, Ohio, and West Virginia. A maximum temperature of 105° was reached in West Virginia, 104° in Ohio, 103° in Tennessee, and 102° Pennsylvania, Maryland, and Illinois.

The heat of this period was particularly oppressive in the States of Kentucky, Indiana, Ohio, and West Virginia. There were a number of prostrations, several resulting fatally, in those States. Probably the most remarkable temperature record of the month at any individual station was that at Deer Park, Md., elevation 2,457 feet, where it registered 102° on the 10th, and 10 days later a minimum of 37° was registered.

An unusually large range in temperature occurred during the month in nearly all the States in the district. This range amounted to 65° in the western portions of Pennsylvania and Maryland and in Ohio, while the range for the district was 70°.

PRECIPITATION.

The monthly precipitation was much above normal over the northeastern quarter of the district, an area comprising the western portions of New York, Pennsylvania, and Maryland and the greater portion of Ohio and West Virginia. It was also considerably above normal in the western portions of Virginia and North Carolina, in northwestern Alabama, western Tennessee, and over much of Kentucky. It was below normal in Indiana and Illinois, except in the extreme southern portions of those States, over extreme eastern Kentucky, eastern Tennessee, and the sections of Virginia and North Carolina immediately bordering on those States. It was also below normal over an area, about 100 miles in width, extending from north central Tennessee northward across the blue-grass region of Kentucky to central Ohio.

Over practically all of the Ohio River drainage area above the Big Sandy on the south and the Scioto on the north the rainfall of the month totaled between 5 and 12 inches. Over the Cheat and Monongahela Basins of West Virginia and southwestern Pennsylvania, where the rainfall was greatest, there were between 8 and 12 inches. The largest rainfall of the month, however, in the entire district occurred on the headwaters of the Tennessee River, in southwestern North Carolina, where 13.3 inches were received at two stations of high elevation, both located in Macon County, N. C. Six to eight inches were received at several other stations in North Carolina and at several stations in the Great Kanawha Basin of southwestern Virginia, also at a few stations in the Tennessee Basin of northwestern Alabama and western Tennessee. The lightest rainfall in the district was in the Wabash Basin of Illinois and Indiana. Over all this section the amount was less than 3 inches, over much of it less than 2 inches, and at a few stations less than 1 inch. The smallest amount was 0.72 inch at Farmersburg, Ind. At several stations in central Kentucky the amount of rain was less than 3 inches. Over all of the district other than those sections mentioned the monthly rainfall was, with a few local exceptions, between 3 and 6 inches.

Showers occurred more or less generally over the district during the first eight or nine days. They were more general and the rainfall more satisfying, however, during the first three or four days. Scattered showers, with an occasional heavy local rain, occurred in the period 12th–18th. During the last week rains were general and heavy in Kentucky and Ohio and eastward to the Atlantic coast. They were also, during this period, more or less general and heavy at times in North Carolina and southwestern Virginia, and frequent, with an occasional heavy rainfall, in other portions of the district. Excessively heavy rains occurred during the last seven or eight days of the month over large areas of the upper Ohio Basin. From west central West Virginia northeastward over Pennsylvania and Maryland, covering the greater portion of the Little Kanawha Basin and the southern tributaries of the Monongahela, the rainfall during the rainstorm of the 28th–31st alone exceeded 5 inches.

Excessive 24-hour precipitation occurred at quite a few stations in Ohio, Pennsylvania, and West Virginia in the period 28th–30th. At a number of stations in these States, 24-hour amounts ranged between 2.50 and 4.37 inches, the latter amount being measured at Ryan, Roane County, W. Va., on the 30th. During the 29th–30th excessive rains also fell in North Carolina, 24-hour amounts ranging between 2.80 and 4.77 inches being measured at several stations. The latter amount was received at Rock House, N. C. Besides these excessive 24-hour amounts, 3.04 inches fell at a station on the Wabash River in Illinois on the 5th, 3.33 inches at Rome, Ind. on the 28th, and 2.67 inches fell in 50 minutes at Asheville, N. C., on the 12th.

In western Maryland the rainfall was the heaviest ever received in August, and averaged more than 7 inches above normal. At many stations in West Virginia the excess in rainfall ran from 4 to nearly 8 inches, while at many stations in Ohio it was from 2 to 4.5 inches. In both of these States the monthly rainfall was greater than in any other August in the last quarter of a century.

These general and heavy rains were not destructive, however, but in the main were productive of general good. Coming as they did after so long a droughty condition, they thoroughly soaked the soil and replenished the much-depleted water supply, the water in the rivers and streams and wells and springs having become very low. These rains not only completely broke the prolonged drought, but gave good boating stages in the navigable rivers and high water in most of the smaller streams, particularly those in the upper half of the Ohio River watershed.

MISCELLANEOUS.

August 3 and 4.—A series of heavy thunderstorms occurred in the southern half of Pennsylvania, and lightning and wind did considerable damage. Near Uniontown, Pa., 20 persons were shocked when lightning struck a large tent sheltering about 200 people, and at Butler, Pa., 4 houses and 2 barns were struck and badly damaged, 3 persons receiving severe shocks, and 1 horse and 3 cows being killed.

August 8.—Two cows were killed by lightning on the farm of Moses Fry at Lewisburg, W. Va. Several dwellings were struck by lightning and 2 barns burned from this cause in the eastern portion of Ballard County, Ky. A wind, rain, and hailstorm did considerable damage in Graves County, Ky., and 5 horses were killed by lightning near Mayfield, Ky.

August 12.—The residence of George D. Todd, on the Knobs, 4 miles north of New Albany, Ind., was struck by lightning and destroyed, involving a loss of $30,000.

August 14.—At Rogersville, Tenn., 2 persons were killed and 8 others seriously injured when lightning struck a church in which they had taken refuge.

August 17.—In Muskingum County, Ohio, 7 barns were struck by lightning and destroyed, causing a loss of about $15,000. A severe hailstorm destroyed much tobacco,

corn, and fruit in the northeastern part of Butler County, Ohio. The path of the storm was about 1 mile wide and 15 miles long, and the tobacco crop in this area was reported to be practically destroyed. At Columbus the wind reached a velocity of 60 miles per hour from the west, equaling the highest August record at that station. Only slight damage was done in that vicinity, but near Gratiot, Ohio, about 50 shade trees were blown down and corn was badly damaged. Six hogs were killed on the farm of W. H. Botts, near Bagdad, Ky., and William Brewer, a farm hand, was injured. A mule was killed by lightning on the farm of William Wilhoite, near Newburg, Ky.

August 18.—At Columbia, Tenn., 5 head of colts on the Little Bigby stock farm were struck by lightning and killed. They were valued at $200 each. A mule was also killed by lightning at the same time.

August 19.—At Rogersville, Tenn., 1 man was killed by lightning and several others severely shocked.

August 20.—At Golconda, Ill., a poultry house was struck by lightning and destroyed with a loss of $2,000.

August 27.—A severe storm did great damage in and around Cattaraugus, N. Y. Much damage was caused by the overflow of streams in Cattaraugus County, N. Y. Humphrey and Great Valley Creeks were swollen into destructive torrents. Several persons lost their lives in these streams and extensive damage was done by inundation of the adjacent lowlands.

August 28.—Seven head of horses and mules were killed by lightning at Pulaski, Tenn., with a loss of over $1,000.

Rivers and streams.—Rivers and streams over all the district were at very low stages until affected by the heavy rains near the end of the month. The Kentucky River was as low if not lower than it had been in 25 years, and many streams in the blue grass section of Kentucky had practically dried up, not even affording enough water for stock. The same may be said of other southern as well as the northern tributaries of the Ohio River. The Wabash at many places reached a lower stage than ever recorded before. The Cumberland and Tennessee Rivers were at a very low stage throughout the month. Navigation was suspended over the greater portion of these rivers nearly all the month. The heavy rains near the close of the month caused good stages of water in all the upper tributaries and the upper reaches of the Ohio River, and fair stages for the season in many of the central tributaries.

Note.—A cooperative station of the climatological service was established during the month at Mountain Lake, Giles County, Va. The elevation of this station is 4,348 feet above sea level, and is the highest climatological station east of the Rocky Mountain slope.

ENGINEERING NOTES.

In the extreme southwestern corner of Indiana, in the county of Posey, there is a considerable body of water known as Hoveys Lake. The lake covers about 1,000 acres of land and is really a chain of lakes with an outlet to the Ohio River. It has been rather noted for years as a fishing and hunting resort. About two years ago the owners of this lake began building a concrete dam across the mouth of its outlet, with the purpose in view of eventually transforming the land now occupied by the lake into tillable soil and farm land. The belief is that when the periodical overflows from the Ohio River come, the dam will prevent the water running out of the lake when the flood recedes and thus the heavy sediment contained in the flood waters will settle in the lake, and gradually as inundation comes and goes the lake will become filled and the land reclaimed. The experiment is attracting much attention.

Steps have been taken to organize a drainage district to protect and drain the bottom lands along the Ohio River and Harris Fork, mostly in Obion County, Tenn. Harris Fork is a small but troublesome stream which crosses the State line at Fulton, Ky. Floods in Harris Fork have been quite annoying and costly to the citizens of Fulton, a single overflow having been known to cause from $3,000 to $5,000 of damage in that town, and such inundations are somewhat frequent. By a comparatively small expenditure these inundations can be prevented and also considerable valuable bottom lands saved from flooding.

TABLE 1.—*Climatological data for August, 1911. District No. 3, New York.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall; unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New York.																				
Allegany	Cattaraugus	1,441	5	67.7	.....	92	10	44	20†	36	9.68	.....	2.40	0	13	2	19	10	nw.	Charles E. Whitney.
Bolivar	Allegany	1,800	17	67.0	+ 1.6	93	7†	37	21	45	4.62	+ 0.90	1.11	0	16	6	9	16	sw.	B. O. Newton.
Olean	Cattaraugus	.....	3	.....	.....	.....	.....	.....	.....	.....	7.74	.....	1.62	0	18	15	8	8	w.	John W. Allen.
Pennsylvania.																				
Aleppo	Green	1,135	10	72.8	+ 2.6	100	10	43	20	46	6.14	+ 3.04	1.77	0	11	13	9	9	sw.	J. S. Hinerman.
Baldwin	Butler	1,404	5	70.0	.....	91	1	45	20	37	7.76	.....	2.00	0	12	9	15	7	w.	S. H. Templeton.
Brookville	Jefferson	1,173	20	67.7	.....	93	10	39	20†	46	11.78	+ 7.97	2.00	0	14	.....	.....	.....	w.	H. C. Bartholomew.
Clarion	Clarion	1,078	26	.....	.....	.....	.....	.....	.....	.....	9.46	+ 5.87	1.92	0	12	11	5	15	s.	J. A. Miller.
Claysville	Washington	1,127	7	74.4	.....	102	10	43	20†	47	7.88	.....	1.65	0	13	7	17	7	w.	E. T. Buchanan.
Confluence	Somerset	1,352	27	.....	.....	.....	.....	.....	.....	.....	8.00	+ 4.27	2.15	0	17	9	4	18	w.	Grant Pyle.
Franklin	Venango	955	37	70.9	+ 2.2	102	8	45	20†	37	6.76	+ 3.11	1.53	0	15	13	5	13	sw.	F. E. Dixon.
Freeport	Armstrong	772	38	.....	.....	.....	.....	.....	.....	.....	5.30	+ 1.72	1.82	0	13	11	5	15	.....	Mrs. Anna R. Burtner.
Greensboro	Green	768	22	.....	.....	.....	.....	.....	.....	.....	7.08	+ 3.95	1.74	0	16	10	8	13	sw.	James Kramer.
Greenville	Mercer	950	15	69.8	+ 2.6	95	10	41	21	43	8.02	+ 4.46	2.65	0	10	19	7	5	w.	A. M. Orr.
Indiana	Indiana	1,350	14	72.9	+ 3.4	99	10	42	20	42	4.03	+ 0.04	1.18	0	11	11	8	12	s.	R. W. Wehrle.
Johnstown	Cambria	1,184	23	72.6	+ 1.4	100	10	46	20	43	7.02	+ 2.45	2.25	0	16	6	19	6	sw.	E. C. Lorentz.
Lock No. 4	Washington	718	25	.....	.....	.....	.....	.....	.....	.....	7.05	+ 3.76	1.25	0	15	14	8	9	s.	R. T. McGowan.
Lycippus	Westmoreland	1,420	19	73.2	+ 2.2	95	10	49	20	33	5.80	+ 1.77	1.08	0	14	.....	.....	.....	.....	Murray Forbes.
Pittsburgh	Allegheny	842	41	73.8	+ 1.3	97	10	51	20	31	6.30	+ 3.12	2.23	0	13	10	10	11	nw.	U. S. Weather Bureau.
Saegerstown	Crawford	1,116	20	68.8	+ 1.7	94	10	40	20†	43	6.04	+ 1.85	2.27	0	15	8	13	10	nw.	J. G. Apple.
Skidmore	Lawrence	1,000	7	70.6	.....	94	9†	37	20	40	3.40	.....	1.40	0	3	24	0	7	sw.	W. H. Stoner.
Somerset	Somerset	2,250	55	70.0	+ 3.1	97	10	40	20	46	6.71	+ 1.99	2.70	0	12	8	13	10	se.	W. M. Schrock.
Uniontown	Fayette	999	23	74.6	+ 3.0	94	11	47	20	31	8.10	+ 3.72	2.12	0	15	2	14	15	ne.	Wm. Hunt.
Warren	Warren	1,137	22	67.6	+ 0.4	90	10	41	20	37	7.58	+ 3.65	2.36	0	14	11	0	20	sw.	Anna Simpson.
Maryland.																				
Deer Park	Garrett	2,457	17	69.9	+ 4.6	102	10	37	20	56	11.36	+ 7.89	2.25	0	18	.....	.....	.....	.....	S. P. Specht.
Grantsville	....do	2,351	17	67.8	+ 1.2	88	11	43	20†	34	10.99	+ 7.13	2.00	0	17	10	10	11	.....	J. S. Miller.
Oakland	....do	2,461	11	68.2	.....	93	11	40	20	38	12.73	.....	2.25	0	16	13	12	6	w.	R. E. Weber.
West Virginia.																				
Bancroft	Putnam	574	10	.....	.....	.....	.....	.....	.....	.....	7.64	+ 2.38	2.75	0	16	18	2	11	ne.	James Hill.
Beckley	Raleigh	2,440	12	72.2	+ 2.3	79	8	45	20†	42	2.76	− 0.02	0.73	0	7	15	2	14	w.	John D. Riggs.
Bens Run	Pleasants	622	10	76.7	+ 3.1	105	10	52	20†	43	4.36	+ 0.77	1.65	0	8	25	1	5	.....	J. D. Riggs.
Bluefield	Mercer	2,563	17	73.4	+ 2.4	95	12	51	21	33	4.79	− 0.04	0.70	0	13	8	22	1	.....	Norfolk & Western Ry.
Buckhannon	Upshur	1,472	20	72.4	+ 2.2	96	11	45	20†	42	6.98	+ 3.47	3.15	0	9	19	5	7	.....	H. A. Darnall.
Cairo	Ritchie	667	20	76.2	+ 3.5	102	10	58	30	40	4.98	+ 1.82	2.00	0	8	0	19	12	s.	Van A. Zevely.
Central Station	Doddridge	900	11	72.6	+ 1.2	100	11	42	21	47	7.72	+ 4.63	2.00	0	15	6	18	7	sw.	G. W. Sherwood.
Charleston	Kanawha	598	24	77.8	.....	100	11†	53	21	38	7.88	+ 3.78	2.05	0	15	13	9	9	w.	R. C. Hewes.
Creston	Wirt	612	11	75.6	+ 2.5	103	10	46	21	45	5.26	+ 2.40	2.60	0	8	18	6	7	se.	J. M. Reed.
Cuba	Jackson	544	10	74.8	+ 2.9	102	10	46	21	46	5.68	+ 2.86	1.60	0	13	6	21	4	w.	C. T. Perry.
Elkhorn	McDowell	1,933	19	72.4	+ 1.2	94	11	48	21	34	4.87	+ 1.39	2.00	0	15	19	10	2	sw.	J. J. Lincoln.
Elkins	Randolph	1,940	13	71.6	+ 3.3	97	11	47	21	41	10.42	+ 6.77	2.60	0	18	12	6	13	n.	U. S. Weather Bureau.
Fairmont	Marion	879	18	.....	.....	.....	.....	.....	.....	.....	8.14	+ 4.93	1.90	0	14	.....	.....	.....	.....	H. Glenn Fleming.
Glenville	Gilmer	738	22	76.4	+ 3.4	103	11	46	21	45	8.45	+ 4.77	2.71	0	10	5	8	18	sw.	John Holt.
Grafton	Taylor	985	18	74.4	+ 2.0	100	11	47	20	40	11.50	+ 7.97	3.71	0	15	14	11	6	.....	John W. Snider.
Green Sulphur Springs	Summers	1,600	16	72.5	+ 0.8	93	11	48	21	36	4.52	+ 1.54	1.17	0	15	10	16	5	w.	Arthur George.
Hinton	....do	1,400	21	75.7	+ 1.7	99	11	51	21	37	5.47	+ 1.76	1.46	0	17	19	4	8	sw.	J. B. Lavender.
Huntington	Cabell	510	17	75.8	+ 1.1	97	11	53	21	34	5.82	+ 2.39	2.54	0	10	17	1	13	w.	L. H. Hutchinson.
Lewisburg	Greenbrier	2,200	11	72.0	+ 1.9	93	11	50	22	34	5.96	+ 2.53	1.47	0	14	25	4	2	sw.	Geo. T. Argabrite.
Logan	Logan	665	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. C. Ragland.
Lost Creek	Harrison	1,033	15	74.1	+ 3.4	99	11	42	21	48	8.08	+ 4.06	2.55	0	11	20	5	6	w.	Allen Smith.
Madison	Boone	704	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. E. Bradley.
Mannington	Marion	967	10	73.0	.....	98	10†	44	20†	44	6.72	.....	1.96	0	13	15	7	9	w.	Jas. A. Morgan.
Marlinton	Pocahontas	2,169	17	72.8	+ 4.8	98	11	46	20	40	6.54	+ 2.04	2.42	0	14	15	7	9	.....	C. J. McCarty.
Morgantown	Monongalia	1,250	36	73.7[c]	+ 1.5	95	11	49[c]	20†	35[c]	10.11	+ 6.08	2.55	0	12	9	14	8	.	Horace Atwood.
Moundsville	Marshall	640	10	75.4	+ 2.7	100	10	47	21	42	5.68	+ 2.68	2.03	0	11	15	4	12	nw.	M. L. Brown.
New Cumberland	Hancock	987	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Frank S. Evans.
New Martinsville	Wetzel	634	18	76.4	+ 2.4	104	10	50	21	45	6.26	+ 3.58	1.61	0	10	17	8	6	s.	Wm. Ankron.
Nuttallburg	Fayette	2,252	18	66.1[a]	.....	89	8	49	.....	31[a]	.....	.....	.....	0	.....	8[a]	6[a]	3[a]	.....	Miss Donna Tully.
Parkersburg	Wood	638	24	76.2	+ 2.9	98	10	52	21	35	5.79	+ 2.26	2.07	0	15	10	11	10	n.	U. S. Weather Bureau.
Parsons	Tucker	1,662	12	71.6	+ 2.3	95	11	45	21	40	8.45	+ 5.29	.....	0	.....	7	15	9	.....	J. W. Swisher.
Philippi	Barbour	1,192	18	73.6	+ 2.0	99	11	46	20	41	9.90	+ 6.33	3.73	0	15	16	8	7	w.	J. D. Dadisman.
Pickens	Randolph	2,785	20	69.2	+ 2.1	90	12	46	20	35	5.55	+ 0.79	1.50	0	10	18	6	7	w.	Dr. J. L. Cunningham.
Pineville	Wyoming	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. V. Senter.
Point Pleasant	Mason	553	21	77.0	+ 2.3	105	11	48	21	43	5.40	+ 2.29	2.00	0	12	16	6	9	se.	W. D. Holmes.
Powelton	Fayette	904	14	75.1	+ 2.5	101	11	47	21	41	2.38	− 1.29	0.83	0	13	8	20	3	.....	Morris Hansford.
Princeton	Mercer	2,469	10	67.8	+ 0.7	85	11	48	20	30	5.00	− 0.06	0.75	0	12	12	16	3	w.	H. Scott.
Robertsburg	Putnam	574	11	76.6	+ 1.9	105	10	47	21	48	7.53	+ 4.80	2.70	0	10	17	0	14	n.	E. P. Turley.
Ryan	Roane	639	8	74.8	.....	99	10†	44	21	44	8.36	.....	4.37	0	13	15	10	6	.....	Wm. E. Ryan.
Smithfield	Wetzel	919	8	72.4	.....	95	11	50	20	36	6.32	.....	1.58	0	12	13	10	8	n.	G. M. Whisler.
Spencer	Roane	710	13	74.2	.....	99	11	47	20	41	8.38	+ 5.54	2.93	0	12	3	23	5	.....	A. M. McKown.
Sutton	Braxton	839	9	74.8	.....	103	9	50	19†	42	5.92	+ 2.35	1.58	0	8	17	3	11	.....	J. E. Baughman.
Terra Alta	Preston	3,207	12	66.6	.....	93	11	45	20	28	12.14	+ 7.94	3.80	0	15	11	8	12	sw.	C. F. Dodge.
Union	Monroe	.....	7	71.4	.....	95	17	49	21	42	6.98	.....	1.55	0	11	.....	.....	.....	.....	Shelton Clark.
Valley Fork	Clay	.....	9	.....	.....	104	10	.....	.....	.....	4.42	.....	1.30	0	5	18	.....	5	.....	Miss Blanche Pierson.
Webster Springs	Webster	1,500	7	74.6	.....	98	11	49	20	37	4.39	.....	0.83	0	14	8	16	7	s.	D. H. Hamrick.
Wellsburg	Brooke	1,225	12	72.2	+ 3.0	94	10	50	20	34	4.54	+ 1.13	1.01	0	11	10	13	8	w.	C. P. Waugh.
Weston	Lewis	824	21	76.6	+ 3.5	104	11	52	31	44	5.70	+ 1.97	2.00	0	13	12	11	8	sw.	Miss C. M. Davis.
Wheeling	Ohio	645	26	74.7	.....	99	7	48	20	40	5.75	+ 2.35	2.05	0	11	13	3	15	sw.	Miss M. B. Forsyth.
Williamson	Mingo	660	11	77.2	+ 1.7	101	11	50	21	40	2.38	− 1.14	0.58	0	13	18	9	4	w.	J. F. Keyser.
Ohio.																				
Amesville	Athens	630	7	75.6	.....	104	10	45	21	47	7.28	.....	2.76	0	13	17	9	5	.....	F. W. Gibson.
Bangorville	Richland	1,380	24	72.0	+ 1.8	98	10	48	30	34	6.68	+ 3.51	1.28	0	11	5	20	6	sw.	S. M. Painter.
Bellefontaine	Logan	1,276	32	70.2	− 1.4	95	10	48	20	35	5.39	+ 2.02	1.21	0	13	11	14	6	s.	Cory L. Lane.
Bladensburg	Knox	1,100	20	69.6[b]	− 0.7	96	10	41	20†	40[b]	.....	.....	.....	0	.....	.....	.....	.....	w.	Miss Mary Elliott.
Cadiz	Harrison	1,245	8	73.3	.....	99	10	49	20	37	8.13	.....	1.70	0	12	8	9	14	sw.	Harry B. McConnell.
Cambridge	Guernsey	803	19	71.6	+ 0.9	95	10	41	21	34	7.37	+ 4.43	1.96	0	13	8	18	5	.....	Samuel Mehaffey.
Camp Denison	Hamilton	570	18	74.8	− 0.1	99	10	49	21	39	3.70	+ 0.90	1.04	0	10	12	14	5	sw.	Henry F. Pinkvoss.
Canal Dover	Tuscarawas	884	18	71.3	+ 0.7	96	10	44	20†	37	7.27	+ 4.31	2.00	0	11	4	22	5	sw.	Ed. S. Slingluff.
Canton	Stark	1,080	28	71.8	+ 2.2	97	10	45	20†	38	6.87	+ 3.53	1.54	0	16	13	5	13	s.	Carl H. Meyer.
Cardington	Morrow	1,010	16	72.0	+ 2.0	98	9	47	19	35	4.53	+ 1.96	1.33	0	9	14	5	12	ne.	J. W. Shaw.
Chillicothe	Ross	630	8	.....	.....	.....	.....	.....	.....	.....	4.85	.....	1.31	.....	7	.....	.....	.....	.....	Marion Mackey.
Cincinnati	Hamilton	628	40	76.0	+ 0.5	96	10	54	30	27	3.06	− 0.27	1.17	0	9	6	9	16	se.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for August, 1911. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Ohio—Continued.																				
Circleville	Pickaway	694	23	74.2	+ 0.9	100	10	51	20	38	4.70	+ 1.56	1.00	0	16	14	5	12	nw.	Mrs. S. W. Courtright.
Clarington	Monroe	600	8	73.7	.....	100	10	46	21	44	6.84	.....	1.75	0	12	10	10	11	sw.	Col. S. Tschappat.
Columbus	Franklin	918	33	73.9	+ 0.9	98	10	51	30	31	3.62	+ 0.40	1.46	0	11	10	12	9	sw.	U. S. Weather Bureau.
Coshocton	Coshocton	770	2	.....	.....	.....	.....	.....	.....	.....	7.97	.....	1.60	.....	17	.....	.....	.....	.....	Mrs. Ada Jeffries.
Dayton	Montgomery	899	....	73.8	.....	98	10	48	30	30	3.25	.....	1.05	0	12	11	12	8	sw.	U. S. Weather Bureau.
Do	do	790	30	74.4	+ 0.8	101	10	49	20†	39	3.58	+ 0.50	1.03	0	12	.....	.....	.....	.....	Mrs. Edith E. L. Boyer.
Delaware	Delaware	927	14	73.4	+ 1.7	100	10	46	20†	40	4.22	+ 0.95	0.97	0	11	16	6	9	nw.	Prof. L. L. Hudson.
Demos	Belmont	1,325	23	73.8	+ 2.5	102	10	48	20†	34	6.84	+ 3.12	1.79	0	14	18	7	6	s.	J. T. Dysart.
Dennison	Tuscarawas	846	1	74.2	.....	101	10	44	21	44	5.80	.....	1.96	0	12	10	18	3	s.	Water Supply Co.
Frankfort	Ross	750	19	75.7	+ 3.1	99	10	48	20†	41	4.99	+ 1.77	1.50	0	8	15	8	8	sw.	O. A. Cory.
Garrettsville	Portage	1,005	27	69.3	+ 2.3	95	10	39	20†	44	6.38	+ 2.90	1.24	0	13	6	21	4	sw.	S. M. Luther.
Granville	Licking	960	29	73.0	+ 2.0	100	10	45	20	41	5.27	+ 2.46	1.21	0	15	13	0	18	sw.	Dr. L. E. Davis.
Gratiot	do	1,000	22	71.8	+ 1.0	93	10	47	21	34	6.99	+ 3.81	1.50	0	13	11	13	7	w.	W. B. Longstreth.
Green	Adams	500	18	75.2	+ 0.5	103	10	48	25	42	5.88	+ 2.44	2.75	0	5	16	10	5	w.	W. F. Kenyon.
Green Hill	Columbiana	1,135	17	69.6	+ 0.9	93	10	39	20	41	5.83	+ 2.53	1.33	0	12	9	19	3	sw.	Jos. E. Bentley.
Greenville	Darke	1,060	25	72.2	+ 1.3	97	10	50	20†	30	4.29	+ 0.98	0.72	0	15	15	8	8	s.	Geo. A. Katzenberger.
Haydenville	Hocking	700	....	73.3	.....	97	10	42	21	43	3.92	.....	1.26	0	10	18	6	7	sw.	H. W. Stiers.
Hillsboro	Highland	1,063	32	74.4	0.0	100	10	50	21	37	5.41	+ 2.16	2.16	0	11	6	17	8	sw.	Carey H. Roush.
Ironton	Lawrence	575	28	77.0	+ 3.7	102	11	49	21	43	3.84	− 0.10	0.93	0	12	13	12	6	sw.	James Bull.
Jacksonburg	Butler	975	43	73.8	− 0.6	98	10	48	30	34	4.97	+ 1.57	1.00	0	9	13	9	9	ne.	Dr. J. B. Owsley.
Kenton	Hardin	1,015	19	70.2[c]	− 1.6	98[c]	10	44[c]	19†	44	4.85	+ 2.45	1.98	0	8	16	8	7	nw.	N. S. Martin.
Killbuck	Holmes	1,087	19	72.0	+ 1.0	99	10	40	19	42	6.69	+ 3.39	1.60	0	14	13	10	8	ne.	Lloyd C. Schonauer.
Lancaster	Fairfield	898	16	73.6	+ 1.9	96	10	49	21	35	5.50	+ 2.62	1.59	0	11	16	6	9	sw.	R. L. Renshaw.
McConnelsville	Morgan	710	27	74.0[a]	+ 2.2	98[a]	10	46[a]	21	39	6.25	+ 3.02	1.80	0	13	9	12	10	ne.	C. H. Morris.
Marietta	Washington	627	91	76.4	+ 4.4	103	10	51	21	41	5.97	+ 2.21	1.77	0	12	8	10	13	n.	Prof. T. D. Biscoe.
Marion	Marion	980	33	73.4	+ 1.5	101	10	45	20	43	4.12	+ 1.17	1.13	0	9	9	13	9	nw.	Dr. E. H. Raffensperger.
Millfordton	Knox	1,200	19	72.0	+ 1.5	99	10	45	20	41	4.91	+ 2.07	2.41	0	9	16	9	6	sw.	L. H. Burgess.
Milligan	Perry	875	18	73.0	+ 1.1	100	10	42	21	46	5.78	+ 2.98	2.02	0	11	8	13	10	nw.	V. C. Eveland.
Millport	Columbiana	1,145	18	70.5	+ 1.3	95	10	41	20	38	6.83	+ 3.59	2.25	0	15	4	19	8	sw.	G. F. Copeland.
Nellie	Coshocton	850	11	71.8	+ 0.2	97	10	40	20	45	7.66	+ 3.81	1.60	0	12	7	20	4	w.	Ethel L. Gamertsfelder.
New Alexandria	Jefferson	1,050	26	73.4	+ 2.3	100	13	44	19	37	6.50	+ 2.93	2.10	0	9	18	5	8	w.	Mrs. Mary K. Pennell.
New Berlin	Stark	1,100	18	70.4	− 0.6	96	10	43	20†	39	5.53	+ 2.08	1.40	0	11	17	7	7	n.	Clayton Holl.
New Waterford	Columbiana	1,053	16	70.9	+ 1.5	97	10	40	20	40	5.77	+ 2.08	2.17	0	7	9	15	7	sw.	Sam. C. Scott.
Ohio State University	Franklin	757	28	73.2	+ 2.1	99	10	48	20†	38	4.63	+ 1.70	1.53	0	12	7	19	5	w.	Prof. H. C. Lord.
Pataskala	Licking	1,015	16	72.8	+ 0.9	98	10	46	20	38	4.72	+ 1.44	1.23	0	13	5	21	5	ne.	J. N. Ridenour.
Peebles	Adams	645	1	72.4	.....	103	10	40	20	58	6.09	.....	1.83	0	11	8	18	5	e.	Ora O. Smalley.
Philo	Muskingum	1,018	16	73.0	− 0.1	97	10	48	20†	37	5.24	+ 2.48	1.83	0	12	11	12	8	se.	L. C. Burckholter.
Piqua	Miami	847	1	.....	.....	.....	.....	.....	.....	....	6.39	.....	1.80	0	11	12	6	13	se.	Harry L. Roberts.
Plattsburg	Clark	1,130	18	72.2	0.0	98	10	45	29	33	6.57	+ 4.09	1.24	0	10	9	13	9	w.	F. E. Stewart.
Portsmouth	Scioto	527	80	76.0	+ 1.7	97	10	50	21	37	5.86	+ 2.40	2.40	0	15	10	3	18	sw.	Dr. H. A. Shirrmann.
Prospect	Marion	909	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Neil J. Gast.
Rittman	Wayne	990	19	70.6	+ 1.4	96	5†	45	20†	37	7.25	+ 4.18	1.85	0	11	19	5	7	w.	J. B. Gish.
Shenandoah	Richland	1,100	19	69.8	− 0.1	92	5†	46	20†	36	6.73	+ 3.61	2.11	0	9	4	21	6	sw.	T. B. Arnett.
Sidney	Shelby	985	28	73.0	+ 0.5	100	10	50	20†	37	9.24	+ 6.41	3.00	0	12	14	3	14	sw.	Hamline B. Blake.
Somerset	Perry	1,080	12	75.0[c]	+ 1.5	100	10	55[f]	30	33	7.02	+ 3.85	1.50	0	11	16	9	6	w.	Miss M. W. C. Sheridan.
Springfield	Clark	980	17	.....	.....	.....	.....	.....	.....	.....	5.47	+ 3.10	1.40	0	12	5	21	5	sw.	W. A. Webster.
Summerfield	Noble	1,187	5	73.2	.....	96	6†	44	20†	41	7.21	.....	2.35	0	11	10	15	6	sw.	H. R. McClintock.
Syracuse	Meigs	583	1	76.1[h]	.....	104[h]	10	49[h]	21	45	5.29	.....	1.55	0	9[h]	7[h]	10[h]	6[h]	sw.	E. G. Campbell.
Thurman	Gallia	696	18	76.9	+ 2.0	102	11	50	21	40	3.53	+ 0.66	1.05	0	6	7	15	9	.....	D. D. Thomas.
Urbana	Champaign	1,031	43	72.2	+ 0.9	100	10	48	20†	40	4.99	+ 1.71	0.90	0	11	11	16	4	w.	Prof. J. H. Williams.
Warren	Trumbull	900	22	71.4	+ 1.6	98	10	40	20	45	5.39	+ 2.13	1.75	0	12	11	11	9	sw.	M. D. McCorkle.
Waverly	Pike	590	28	74.4	+ 0.7	98	10	46	21	40	5.48	+ 2.09	1.74	0	11	10	2	19	s.	Dr. Peru Hutt.
Waynesville	Warren	700	26	72.7	− 0.3	95	10	51	30	33	3.76	− 0.07	1.60	0	9	14	9	8	sw.	Chas. Michener.
Wooster	Wayne	1,030	32	70.6	+ 1.7	97	10	41	21	41	5.19	+ 2.17	1.39	0	12	12	11	8	nw.	Experiment Station.
Youngstown	Mahoning	846	18	.....	.....	.....	.....	.....	.....	.....	7.79	+ 4.67	3.10	0	15	18	0	13	w.	G. R. Patton.
Zanesville	Muskingum	700	24	.....	.....	.....	.....	.....	.....	.....	4.13	+ 1.25	0.94	0	13	12	2	17	s.	S. G. Sprague.
Virginia.																				
Big Stone Gap	Wise	1,540	20	73.0	+ 0.9	92	10	51	21	31	2.55	− 2.30	.55	0	8	11	15	5	w.	John W. Fox, sr.
Blacksburg	Montgomery	2,170	20	72.0	+ 2.1	90	11†	49	22	35	5.34	+ 1.40	1.21	0	16	9	14	8	w.	Agricultural Exp. Station.
Burkes Garden	Tazewell	3,250	16	67.0	+ 0.7	88	11†	40	20	36	3.69	− 0.64	.85	0	8	11	4	16	sw.	C. H. Greever.
Elk Knob	Lee	3,243	8	74.4	.....	92	10	58	20	28	3.76	.....	.95	0	14	11	8	12	sw.	Henry Nicoll.
Ivanhoe**	Wythe	2,028	7	70.0	.....	88	11	54	20	24	7.09	.....	2.62	0	18	9	20	2	w.	Miss Alice G. Jewett.
Labanon	Russell	2,131	1	72.4	.....	94	11	48	20	37	2.52	.....	.82	0	10	13	9	9	sw.	R. W. Swain.
Marion	Smyth	2,224	16	72.1	+ 1.2	94	12†	48	20	36	4.47	− .10	1.22	0	17	15	11	5	se.	Southwestern State Hosp.
Mendota	Washington	1,350	2	.....	.....	.....	.....	.....	.....	.....	2.29	.....	.80	0	13	.....	.....	.....	.....	Frank M. Barker.
Mountain Lake	Giles	4,348	1	66.4[g]	.....	86	11†	48	20	29[g]	7.30	.....	2.50	0	9	.....	.....	.....	sw.	H. E. Dorland.
Radford	Montgomery	1,773	2	.....	.....	.....	.....	.....	.....	.....	5.32	.....	1.10	0	10	.....	.....	.....	.....	Arthur Roberts.
Speers Ferry	Scott	1,221	15	.....	.....	.....	.....	.....	.....	.....	1.64	− 3.29	.60	0	8	.....	.....	.....	.....	Mrs. L. E. Venable.
Wytheville	Wythe	2,293	18	71.8	+ 1.3	92	11	50	20	31	6.98	+ 2.44	1.92	0	17	15	14	2	w.	U. S. Weather Bureau.
North Carolina.																				
Altapass	Mitchell	2,629	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. J. Woodward.
Andrews	Cherokee	1,800	1	74.6	.....	96	8	51	21	34	3.15	.....	1.00	0	10	11	16	4	sw.	J. D. Link.
Asheville	Buncombe	2,255	32	71.8	+ 1.3	88	11	55	23	28	8.63	+ 3.84	2.83	0	18	8	13	10	nw.	U. S. Weather Bureau.
Banners Elk	Avery	3,750	3	66.2	.....	84	9†	42	20	37	6.95	.....	1.00	0	18	11	6	14	se.	T. L. Lowe.
Blowing Rock	Watauga	4,090	3	68.4[e]	.....	86	8†	47	22	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	Herman S. Deal.
Brevard	Transylvania	2,230	10	73.3	+ 0.8	91	8†	56	23	33	6.69	+ 1.02	.96	0	15	9	19	3	s.	W. E. Breese.
Bryson City	Swain	2,000	23	.....	.....	.....	.....	.....	.....	.....	3.42	− 1.85	.97	0	11	.....	.....	.....	.....	D. K. Collins.
Cullowhee	Jackson	2,100	1	73.2	.....	91	9	50	21	32	3.46	.....	1.17	0	17	16	7	8	s.	F. H. Brown.
Eagle Nest	Haywood	5,050	....	64.9	.....	78	8	52	21†	21	4.07	.....	1.33	0	15	17	6	8	sw.	S. C. Satterthwait.
Hendersonville	Henderson	2,167	15	72.0	− 0.5	90	9†	52	23	31	5.51	− 2.40	1.61	0	14	17	4	10	n.	Dr. L. B. Morse.
Highlands	Macon	3,670	21	65.6	− 0.2	82	8†	47	2	25	13.33	+ 5.70	2.80	0	17	10	13	8	se.	T. G. Harbison.
Hot Springs	Madison	1,326	13	75.5[a]	+ 2.4	93	10	54	20	29	3.98	.....	1.10	0	13	8	18	5	e.	P. A. Garner.
Jefferson	Ashe	2,800	4	71.2	.....	92	17	47	20	34	6.36	.....	1.49	0	11	7	4	20	w.	Prof. E. J. Johnson.
Marshall	Madison	1,646	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. L. Church.
Murphy	Cherokee	1,614	35	.....	.....	.....	.....	.....	.....	.....	4.11	− 1.23	.82	0	15	.....	.....	.....	.....	James C. Midyett.
Rock House	Macon	3,100	19	69.0	− 2.1	83	9	54	22	20	13.32	+ 3.86	4.77	0	20	8	15	8	s.	B. C. Hawkins.
Waynesville	Haywood	2,756	17	71.2	+ 1.0	89	8†	48	21	34	3.35	− 1.07	.84	0	14	20	1	10	ne.	Judge J. C. L. Gudger.
Georgia.																				
Diamond	Gilmer	2,020	21	74.8[a]	+ 1.7	92[a]	16	56[a]	21†	31	2.68	− 4.10	0.82	0	11	11	14	6	.....	R. A. Kimzey.
Mineral Bluff	Fannin	.....	....	74.9	.....	94	9	51	21	35	4.74	.....	1.35	0	13	5	24	2	n.	J.M. Clement.

TABLE 1.—*Climatological data for August, 1911. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Alabama.																				
Bridgeport	Jackson	660	11	.....	.....	.....	.....	.....	.....	.....	4.30	+ 0.15	1.83	0	13	.....	.....	.....	w.	R. L. Moore.
Decatur	Morgan	573	29	78.2	− 0.5	99	27	61	21	27	4.91	+ 1.61	2.12	0	13	10	4	17	e.	Ernest A. Carriger.
Florence	Lauderdale	563	27	76.6	− 2.2	93	10	54	29	22	6.02	+ 2.41	1.65	0	13	12	0	19	e.	Robt. E. Coburn.
Guntersville	Marshall	580	1	78.2	.....	97	8	62	21†	30	3.90	.....	0.94	0	15	5	5	21	ne.	L. S. Long.
Madison	Madison	573	17	76.1	− 3.1	95	8†	59	19†	31	6.48	+ 3.23	0.94	0	14	10	19	2	nw.	Albert Klish.
Riverton	Colbert	360	14	76.6	− 1.8	97	9	57	21	34	3.72	+ 0.33	0.80	0	19	11	15	5	e.	Ernie J. Moore.
Scottsboro	Jackson	652	28	76.6[b]	− 1.0	91	7†	59	21	25	3.72	+ 0.09	1.17	0	14	2	8	21	nw.	H. A. Caldwell.
Tuscumbia	Colbert	488	29	77.9	− 1.0	96	8	64	21†	28	8.13	+ 4.70	2.40	0	17	10	2	19	se.	Samuel Moore.
Tennessee.																				
Ashwood	Maury	725	32	75.6	− 1.9	94	10	61	30	27	6.85	+ 3.13	1.90	0	12	5	10	16	s.	Mrs. Joseph W. Fleming.
Benton	Polk	880	26	77.9	+ 1.6	96	27†	56	21	33	2.45	− 1.64	0.46	0	13	5	21	5	s.	George L. Williams.
Birds Bridge	Greene	.....	5	.....	.....	.....	.....	.....	.....	.....	3.54	.....	0.73	0	14	15	2	14	w.	David B. George.
Bluff City	Sullivan	.....	14	.....	.....	.....	.....	.....	.....	.....	2.13	− 1.96	0.44	0	6	12	4	15	.....	John W. Fisher.
Byrdstown	Pickett	1,026	18	76.0	+ 0.8	95	10†	54	21	35	3.52	− 0.45	1.72	0	6	1	20	10	s.	John Lacy.
Carthage	Smith	500	27	77.7	+ 1.1	96	10	56	21	32	3.58	− 0.56	1.15	0	13	15	4	12	sw.	Earl C. Pickering.
Cedar Hill	Robertson	625	11	78.4	− 0.1	103	17	55	21	36	3.83	+ 0.58	1.00	0	13	14	9	8	s.	J. Frank Ruffin.
Celina	Clay	494	8	.....	.....	.....	.....	.....	.....	.....	3.61	.....	0.83	0	11	17	4	10	.....	Stephen B. Anderson.
Center Point	Chester	400	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Halbert H. Bailey.
Charleston	Bradley	709	14	.....	.....	.....	.....	.....	.....	.....	2.45	− 1.69	0.72	0	13	15	3	13	s.	John T. Weeks.
Chattanooga	Hamilton	808	32	77.4	+ 0.9	92	8	61	21	27	3.02	− 0.73	1.21	0	14	4	16	11	w.	U. S. Weather Bureau.
Clarksville	Montgomery	500	48	75.2	− 0.7	98	9	56	21	27	6.78	+ 3.60	1.80	0	15	12	14	5	.....	Prof. James A. Lyon.
Clinton	Anderson	800	23	.....	.....	.....	.....	.....	.....	.....	2.65	− 1.71	1.44	0	7	15	1	15	ne.	John Thompson.
Dandridge	Jefferson	.....	7	.....	.....	.....	.....	.....	.....	.....	1.10	.....	0.60	0	3	17	4	10	w.	James E. Swann.
Decatur	Meigs	850	15	78.0	+ 0.9	95	17	56	21†	32	3.15	− 1.76	0.70	0	12	10	19	2	sw.	J. Worth Lillard.
Dickson	Dickson	800	15	74.6	− 2.5	92	8†	57	21	28	4.66	+ 1.09	1.24	0	11	6	18	7	s.	Nathan R. Sugg.
Dover	Stewart	500	16	76.8	− 1.2	97	10	55	21	29	5.37	+ 2.33	1.35	0	10	8	12	11	s.	Asa M. Tippit.
Dunlap	Sequatchee	726	2	77.6	.....	97	8	54	21	34	2.79	..	1.05	0	11	9	20	2	.....	S. Bradford Boyd.
Elizabethton	Carter	1,575	21	.....	.....	.....	.....	.....	.....	.....	2.65	− 1.64	0.65	0	10	14	8	9	e.	Charles Boyd.
Erasmus	Cumberland	1,850	14	72.0	0.0	93	9†	45	21	38	3.63	− 1.15	0.93	0	13	11	12	8	s.	Mrs. Sara E. Ashley.
Florence	Rutherford	560	29	76.0	− 0.6	92	10	56	21	26	4.80	+ 1.23	1.60	0	7	8	19	4	s.	Erastus P. Bell.
Franklin	Williamson	648	21	75.6	− 1.0	90	8†	57	21	24	4.43	+ 1.18	1.13	0	13	14	5	12	.....	Young M. Rizer.
Halls Hill	Rutherford	.....	9	.....	.....	.....	.....	.....	.....	.....	7.01	.....	1.40	0	12	17	1	13	s.	Ed F. Wright.
Harriman	Roane	841	16	.....	.....	.....	.....	58	22	.....	2.36	− 1.34	0.90	0	6	6	23	2	.....	Robert R. Ayres.
Hohenwald	Lewis	983	25	75.2	− 0.5	93	8†	55	21	32	7.14	+ 3.34	2.12	0	15	6	18	7	e.	John Lutzelman.
Iron City	Lawrence	600	14	77.4	− 0.3	94	10	57	21	29	5.04	+ 2.48	1.15	0	16	5	24	2	nw.	Capt. H. Paul Seavy.
Jefferson City	Jefferson	.....	1	.....	.....	.....	.....	.....	.....	.....	2.98	.....	1.14	0	8	.....	.....	.....	.....	Calvin C. Maddox.
Johnson City	Washington	1,620	....	77.4	+ 3.9	101	10†	55	20†	38	1.60	− 2.82	0.47	0	10	6	21	4	w.	Ward Crosby.
Johnsonville	Humphreys	364	15	76.6	− 1.9	97	8	56	21	32	5.95	+ 2.63	1.34	0	15	10	9	12	s.	Miss Sallie B. Matthews.
Kingston	Roane	.....	20	.....	.....	.....	.....	.....	.....	.....	2.43	− 1.49	1.03	0	12	17	0	14	se.	Henry Crumbliss.
Knoxville	Knox	977	40	77.4	+ 2.7	94	10	62	21	25	2.99	− 1.01	1.38	0	12	6	15	10	sw.	U. S. Weather Bureau.
Lebanon	Wilson	522	2	76.8	.....	95	10	56	21	29	4.89	.....	1.12	0	12	8	3	20	s.	H. Logan Fields.
Lewisburg	Marshall	727	16	76.8	− 1.0	96	8†	56	21	32	5.63	+ 1.27	1.36	0	14	8	16	7	se.	Dr. Robert D. Crutcher.
Livingston	Overton	1,065	....	75.9	.....	97	18	53	21	33	3.75	.....	1.15	0	11	9	20	2	w.	L. H. Carlock.
Loudon	Loudon	816	8	.....	.....	.....	.....	.....	.....	.....	4.96	+ 1.34	1.15	0	9	15	4	12	s.	Robert W. Clark.
Lynnville	Giles	770	23	75.6	− 1.8	92	8	58	21	27	4.47	+ 0.56	1.52	0	12	4	26	1	s.	Col. James H. Burrow.
McGhee	Monroe	.....	7	.....	.....	.....	.....	.....	.....	.....	3.04	.....	0.98	0	9	19	0	12	s.	Miss Alice L. Headrick.
McMinnville	Warren	1,011	27	75.6	0.0	95	9†	54	31	30	6.25	+ 2.35	.....	0	12	5	18	8	s.	J. Tilden Sparkman.
Maryville	Blount	1,050	15	77.4	+ 1.0	94	27	60[d]	24	28[d]	3.84	− 0.28	1.65	0	9	.....	.....	.....	e.	Mrs. Sam T. Broyles.
Mountain City	Johnson	2,486	14	70.4	+ 1.5	90	11	47	20	35	4.60	− 0.86	1.35	0	14	13	14	4	.....	Edward E. Barry.
Nashville	Davidson	654	40	76.4	− 1.4	95	10	60	29	26	5.17	+ 1.70	1.26	0	13	4	15	12	se.	U. S. Weather Bureau.
Newport	Cocke	1,280	21	77.1	+ 1.8	94	10	59	20	29	3.31	− 1.10	1.16	0	12	15	1	15	s.	Dr. Charles T. Burnett.
New River	Scott	1,215	4	.....	.....	.....	.....	.....	.....	.....	4.62	.....	1.69	0	8	23	3	5	nw.	Burl W. Buttram.
Palmetto	Bedford	770	18	76.2	− 1.5	94	10	56	21	29	6.04	+ 2.55	1.46	0	14	13	9	9	sw.	Mrs. Ross Woods.
Pinewood	Hickman	.....	4	76.6	.....	97	8	55	21	34	5.62	.....	2.00	0	10	6	13	10	s.	Miss Carrie Cash.
Pope	Perry	400	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Miss Bessie Howard.
Rogersville	Hawkins	1,150	26	76.4	− 0.2	98	10	54	20	37	3.75	− 0.44	0.91	0	13	14	10	7	w.	Fred Beal.
Rugby	Morgan	1,410	23	74.0	+ 1.0	98	10	49	21†	40	4.94	+ 0.78	1.25	0	15	3	13	15	n.	Samuel G. Wilson.
Savannah	Hardin	442	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	William Fort Bell.
Sevierville	Sevier	.....	5	75.8	.....	92	8†	53	21	32	2.06	.....	0.58	0	9	3	10	18	sw.	Herbert O. Eckel.
Sewanee	Franklin	2,000	15	73.4	− 1.1	91	11†	54	29	27	3.56	− 0.67	1.31	0	5	6	9	16	s.	Arthur H. Noll.
Sparta	White	920	5	75.4	.....	94	10	55	21	30	5.81	.....	1.78	0	7	8	10	13	w.	Ernest H. Hull.
Springdale	Claiborne	1,058	21	.....	.....	.....	.....	60	0†	.....	3.71	.....	1.07	0	7	13	7	6	w.	Mrs. Lucy E. Breeding.
Springville	Henry	377	8	76.0	.....	95	8	55	21	31	4.91	.....	0.91	0	19	17	8	6	se.	Hudnall A. Boden.
Tazewell	Claiborne	.....	14	.....	.....	.....	.....	.....	.....	.....	2.91	.....	1.43	0	9	18	3	10	sw.	J. Caloway Carr.
Tullahoma	Coffee	1,075	23	75.0	− 0.5	93	10	55	21	29	3.37	− 0.41	1.33	0	11	4	21	6	s.	Reuben T. Moore.
Walling	White	909	8	.....	.....	.....	.....	.....	.....	.....	6.44	.....	2.00	0	12	14	5	12	sw.	John K. Roberts.
Waynesboro	Wayne	753	25	75.6	− 0.3	95	17	57	21	30	8.70	+ 4.87	1.40	0	16	3	15	13	sw.	Harry C. Boyd.
Wildersville	Henderson	400	14	76.1	− 1.5	95	8†	59	29	27	7.22	+ 3.15	1.70	0	12	8	12	11	s.	William R. Wilson.
Worsham	Sumner	550	10	.....	.....	.....	.....	.....	.....	.....	3.03	.....	1.10	0	10	11	8	12	e.	James G. Elizer.
Yukon	Lincoln	850	14	74.6	− 3.1	92	9	57	31	28	6.60	+ 2.83	1.32	0	12	5	23	3	s.	William P. Watson.
Kentucky.																				
Alpha	Clinton	.....	17	74.5	− 2.1	91	11	52	21	31	3.69	− 0.93	1.60	0	5	15	5	11	w.	W. W. Hicks.
Anchorage	Jefferson	700	10	74.4	− 0.4	100	11	49	20†	34	2.51	− 0.24	0.92	0	7	11	14	6	sw.	C. E. Barrett.
Bardstown	Nelson	637	14	78.1	+ 0.5	106	11	54	21	41	4.37	+ 0.96	1.07	0	11	12	3	16	se.	G. M. Talbot.
Beattyville	Lee	650	7	76.0	.....	104	11	45	21	48	4.48	.....	1.66	0	8	8	6	17	w.	G. W. Cann.
Beaver Dam	Ohio	441	8	77.4	.....	101	10†	48	21	37	5.86	.....	1.86	0	8	14	1	16	s.	T. S. Woodward.
Berea	Madison	1,070	10	76.4	+ 1.9	102	10	48	21†	44	4.79	+ 0.20	2.25	0	12	13	14	4	sw.	C. F. Rumold.
Bowling Green	Warren	500	22	77.4	− 1.5	100	10	53	21	37	5.35	+ 1.89	1.00	0	11	8	7	16	s.	Mrs. L. G. Causey.
Burnside	Pulaski	773	20	.....	.....	.....	.....	.....	.....	.....	2.39	− 1.72	0.54	0	13	15	4	12	.....	G. M. Estes.
Calhoun	McLean	397	8	77.8	.....	100	10†	54	21	36	2.76	.....	1.00	0	8	6	20	5	se.	W. A. Taylor.
Catlettsburg	Boyd	544	22	.....	.....	.....	.....	.....	.....	.....	5.72	+ 2.07	2.44	0	10	15	4	12	n.	Mrs. Mertie M. Bruns.
Earlington	Hopkins	370	21	77.8	+ 1.2	105	10†	52	21†	42	4.14	+ 0.82	1.01	0	10	17	6	8	nw.	J. B. Atkinson.
Edmonton	Metcalfe	600	20	76.6	+ 1.6	101	10	50	20	41	2.11	− 1.28	0.43	0	12	11[a]	10[a]	9[a]	s.	Miss Lee Ray.
Eubank	Pulaski	1,177	17	74.0	0.0	99	10	51	21	36	4.43	+ 0.65	2.20	0	10	9	8	14	se.	Mrs. Katie Payne.
Falmouth	Pendleton	530	22	.....	.....	.....	.....	.....	.....	.....	2.18	− 1.26	0.67	0	9	16	2	13	s.	J. V. Oldham.
Farmers	Rowan	668	5	75.2	.....	101	11	45	21	45	4.26	.....	1.22	0	8	10	6	15	.....	Miss Gertrude Sorrell.
Frankfort	Franklin	560	20	77.0	+ 2.3	99	10	56	20	30	5.42	+ 2.00	1.50	0	11	18	2	11	s.	J. H. Roberts.
Franklin	Simpson	691	17	76.3	− 0.8	96	10	53	21	33	6.71	+ 3.38	1.52	0	9	1	27	3	sw.	J. E. Newman.
Greensburg	Green	581	19	74.3	− 1.3	101	10	48	21	42	4.48	+ 0.84	1.58	0	13	16	0	15	se.	L. C. Alcorn.
High Bridge	Jessamine	762	8	.....	.....	.....	.....	.....	.....	.....	2.92	.....	1.11	0	9	20	0	11	.....	Miss Lulu Wood.
Hopkinsville	Christian	524	15	77.4	− 0.8	99	8†	56	21	32	3.75	+ 1.06	0.95	0	13	12	2	17	s.	W. F. Randle.
Irvington	Breckinridge	.....	13	76.4	+ 0.1	99	10	55	21	34	3.29	− 0.29	1.56	0	6	18	5	8	sw.	W. J. Piggott.
Leitchfield	Grayson	635	15	75.2	− 0.3	95	10	53	21	31	6.44	+ 3.33	1.66	0	8	15	10	6	sw.	John E. Stone.
Lexington	Fayette	989	23	75.8	+ 1.2	99	10	56	29	28	2.84	− 0.73	0.80	0	11	4	13	14	sw.	U. S. Weather Bureau.
Loretto	Marion	681	14	76.1	+ 0.4	104	10	47	21	42	2.59	− 0.66	0.64	0	10	19	4	8	.....	Loretto Academy.
Louisville	Jefferson	525	39	78.5	+ 2.0	102	10	59	30	31	2.71	− 0.80	1.37	0	8	6	14	11	n.	U. S. Weather Bureau
Marion	Crittenden	.....	16	76.5	− 2.1	97	10	55	30	32	4.75	+ 2.38	1.52	0	10	8	15	8	sw.	B. C. Paris.
Maysville	Mason	524	14	76.6	+ 0.5	105	10	49	21	43	2.30	− 1.35	1.08	0	10	15	4	12	se.	Mrs. Mary D. Marsh.

TABLE 1.—*Climatological data for August, 1911. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Kentucky*—Continued.**																			
Middlesboro	Bell	1,128	16	75.9	+ 1.4	96	10†	52	21	35	2.82	− 0.60	0.95	0	14	14	16	1		B. H. Perkins.
Mount Sterling	Montgomery	930	21	76.4	+ 2.5	102	10†	52	21	40	3.75	− 0.19	0.63	0	14	16	9	6	s.	James O'Connell.
Owensboro	Daviess	479	14	75.8	− 0.9	97	10	57	21†	29	4.41	+ 1.57	2.50	0	9	11	4	16	se.	Henry S. Berry.
Paducah	McCracken	341	22	.....	.....	.....	.....	.....	.....	.....	6.09	+ 3.13	1.92	0	12	18	0	13	s.	S. A. Fowler.
Paintsville	Johnson		0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. L. Atkinson.
Pikeville	Pike		3	.....	.....	.....	.....	.....	.....	.....	3.27	.....	0.98	0	10	15	0	16	.....	I. M. Williams.
Richmond	Madison	926	19	77.0	+ 1.5	103	10	55	21	38	3.52	+ 0.41	0.97	0	15	17	3	11	.....	J. W. Crooke.
St. John	Hardin	777	15	74.8	0.0	98	10	53	21	37	5.22	+ 2.28	1.32	0	9	18	0	13	.....	Bethlehem Academy.
Scott	Kenton		13	75.0	− 0.4	96	10	52	21	34	4.20	+ 1.29	1.43	0	10	9	14	8	n.	E. B. Wilson.
Shelby City	Boyle	1,087	17	75.6	+ 0.9	105	11	48	21	47	1.84	− 1.15	0.57	0	9	19	7	5	sw.	W. E. Grubbs.
Shelbyville	Shelby	759	22	77.8	+ 2.3	104	11	54	21	36	5.84	+ 2.81	2.20	0	8	15[a]	4[a]	11[a]	sw.	C. R. Burnett.
Taylorsville	Spencer	489	9	76.2[d]	+ 1.7	101	11	50	21†	39[d]	5.13	+ 1.75	1.10	0	9	.....	.....	.....	s.	E. D. Bourne.
Williamsburg	Whitley	939	15	76.2	− 0.1	98	8†	50	21	40	3.95	− 0.68	1.32	0	11	18	3	10	e.	Noble C. Jones.
Williamstown	Grant	943	9	74.6	+ 0.6	97	10†	55	19†	31	4.14	+ 0.92	1.11	0	12	15	1	15	.....	Mrs. Sarah E. Carter.
Indiana.																			
Anderson	Madison	892	16	73.6[b]	+ 0.6	101[d]	10	48[d]	20	38[d]	2.46	- 1.43	1.30	0	8	16	10	5	sw.	W. H. Stanton.
Attica	Fountain	522	1	.....	.....	.....	.....	.....	.....	.....	2.86	.....	0.90	0	8	.....	.....	.....	.....	Robt. E. Ray.
Bloomington	Monroe	744	16	74.8	− 0.1	103	10	49	29†	41	4.03	+ 0.41	1.67	0	12	11	15	5	se.	Earl E. Ramsey.
Bluffton	Wells	835	16	72.6	+ 0.5	101	10	47	29†	44	6.76	.....	1.43	0	11	14	15	2	w.	Tom R. Johnston.
Butlerville	Jennings	767	26	75.6	+ 1.1	101	10	48	20	37	3.33	− 0.18	0.96	0	9	19	8	4	w.	C. F. Hole.
Cambridge City	Wayne	941	20	72.6	+ 1.0	103	10	45	20	44	3.34	+ 0.42	0.78	0	13	17	0	14	ne.	Charles Lemberger.
Columbus	Bartholomew	632	28	74.7	+ 1.0	101	10	45	30	41	4.03	+ 0.73	1.20	0	12	15	5	11	sw.	John A. Perry.
Connersville	Fayette	769	29	74.8	+ 2.8	104	10	48	30	43	2.32	− 0.58	1.03	0	5	3	26	2	sw.	H. T. Swindler.
Crawfordsville	Montgomery	780	1	72.6	.....	104	10	46	31	43	3.08	.....	1.70	0	4	13	9	9	sw.	P. H. Burns.
Delphi	Carroll	688	26	72.8	+ 1.0	99	10	46	20†	38	3.19	+ 0.12	1.53	0	10	12	4	15	.....	L. A. Higginbotham.
Eminence	Morgan	782	5	72.0	.....	100	10	46	20†	39	2.14	.....	0.55	0	6	18	11	2	w.	E. E Kelso, M D.
Evansville	Vanderburg	386	35	77.2	+ 0.2	99	10	54	30	27	4.92	+ 1.68	1.39	0	8	7	19	5	s.	U. S. Weather Bureau.
Farmersburg	Sullivan		13	74.3[a]	− 1.2	101	10	47[b]	30	36[b]	0.72	− 2.13	0.33	0	6	7	17	7	s.	Maurice Yeager.
Farmland	Randolph	1,101	29	71.4	+ 0.2	96	10	49	30	33	4.53	+ 0.87	1.53	0	10	12	3	16	ne.	W. J. Davisson.
Greenfield	Hancock	905	8	74.1	.....	98	10	49	30	35	0.78	.....	0.50	0	4	0	24	7	s.	Prof. W. C. Goble.
Greensburg	Decatur	954	15	73.8	− 0.6	98	10	49	30	36	1.98	− 0.25	1.15	0	6	16	12	3	w.	C. C. Morrison, M. D.
Huntingburg	Dubois	462	3	77.1	.....	103	10†	50	21	38	2.86	.....	1.04	0	5	.....	.....	.....	.....	H. Dufendach.
Huntington	Huntington	741	18	72.0	− 0.5	92	10	47	30	38	4.43	+ 1.00	1.50	0	8	10	17	4	nw.	Chas. McGrew.
Indianapolis	Marion	822	40	74.2	+ 0.6	99	10	50	30	30	1.16	− 2.17	0.61	0	7	9	15	7	s.	U. S. Weather Bureau.
Jeffersonville	Clark	455	29	77.3	+ 1.2	100	10	53	21	35	2.69	− 0.59	1.54	0	9	8	16	7	s.	John C. Loomis.
Judyville	Warren		4	69.1	.....	99	10	45	21	49	4.41	.....	1.72	0	7	19	5	7	ne.	Dale R. Warrick.
Kokomo	Howard	840	19	70.8	− 1.8	98	10	44	20	41	3.64	+ 0.24	2.41	0	5	14	14	3	sw.	P. H. Robertson.
Lafayette	Tippecanoe	617	32	72.4	− 0.2	99	10	48	30	38	2.71	− 0.61	1.36	0	10	15	3	13	e.	Wm. J. Jones, jr.
Laurel	Franklin		1	72.8	.....	98	10	46	20†	38	2.02	.....	0.90	0	11	17	1	13	w.	Burch Schultze.
Logansport	Cass	620	31	73.3	+ 0.8	101	10	48	20†	40	4.45	+ 1.62	1.92	0	9	12	7	12	w.	Chas. Masenna.
Madison	Jefferson	460	19	78.7	+ 2.2	105	10	53	21	41	2.96	+ 0.23	0.90	0	9	9	16	6	nw.	Miss F. Cooperider.
Marengo	Crawford	363	29	74.8	+ 0.1	101	10	48	21	41	2.81	- 1.14	0.94	0	7	12	15	4	sw.	J. M. Johnson.
Marion	Grant	814	25	72.1	− 0.3	101	10	47	29	38	5.08	+ 2.02	1.29	0	8	15	4	12	s.	James F. Hood.
Maxxy	Rush	980	31	73.2[a]	+ 2.2	100[a]	10	45[a]	20	47[b]	2.15	− 0.83	0.85	0	8	10	13	8	sw.	Elwood Kirkwood.
Monticello	White	674	1	.....	.....	.....	.....	.....	.....	.....	2.49	.....	1.04	0	8	18	5	8	n.	J. E. Loughry.
Moores Hill	Dearborn	980	10	75.0	+ 0.5	98	10	51	20†	35	2.71	− 0.57	0.75	0	7	18	5	8	w.	W. S. Bigney.
Mount Vernon	Posey	410	25	76.3	− 1.6	98	10†	52	30	32	6.33	+ 3.22	2.15	0	7	11	5	15	sw.	Guy B. Green.
Paoli	Orange	611	14	75.6	+ 0.2	106	10	48	21	47	3.97	+ 0.27	2.25	0	6	13	16	2	sw.	James A. Gillum.
Princeton	Gibson	481	29	77.4	+ 2.0	103	10	52	30	37	3.07	− 0.10	1.50	0	6	14	6	11	sw.	Albert Mills.
Richmond	Wayne	972	26	71.6	+ 0.5	98	10	46	20	38	4.41	+ 0.70	2.38	0	13	6	20	5	.....	Walter Vossler.
Rochester	Fulton	775	6	71.6	.....	92	10	42	30	30	3.04	.....	1.12	0	8	16	6	9	.....	G. P. Keith.
Rockville	Parke	722	25	73.6	+ 0.6	98	10	50	30	32	2.56	− 0.32	1.88	0	4	14	7	10	se.	Dr. W. N. Wirt.
Rome	Perry	370	8	79.2	.....	107	10	52	21	44	4.35	.....	3.33	0	7	19	6	6	sw.	Adam Anspach.
Salamonia	Jay		6	72.7[e]	.....	99[e]	10	47[e]	29†	43[e]	6.50	.....	2.02	0	8	11[b]	3[b]	15[b]	sw.	Chas. V. Skinner.
Salem	Washington	717	18	77.3	+ 2.0	103	10†	47	21	44	2.23	− 0.76	0.64	0	7	9	17	5	w.	Emmet S. Allen.
Scottsburg	Scott	570	17	78.0	+ 1.9	103	10	54	21	37	3.05	+ 0.26	0.78	0	7	11	12	7	s.	Frank H. Park.
Seymour	Jackson	610	24	76.6	+ 2.2	106	10	48	21†	43	1.63	− 1.80	0.56	0	8	.....	.....	.....	nw.	J. Robt. Blair.
Shelbyville	Shelby	768	7	75.0[a]	.....	103[b]	10	47	29	43[b]	1.85	.....	0.98	0	6	13	13	5	s.	Edgar G. Hodson.
Shoals	Martin	523	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Rev. G. Halleck Rowe.
Terre Haute	Vigo	498	21	75.0	− 1.0	100	10	47	30	35	1.31	− 1.68	1.24	0	4	11	11	9	sw.	Prof. R. G. Gillum.
Veedersburg	Fountain	612	12	74.0	0.0	100	10	47	20	44	2.77	− 0.42	1.35	0	7	17	11	3	s.	L. A. Culver, jr.
Vevay	Switzerland	525	30	76.8	+ 1.3	100	10	54	21	39	7.50	+ 4.49	1.65	0	8	3	20	8	sw.	Miss Frederica Boerner.
Vincennes	Knox	431	19	76.2	− 0.6	101	10†	49	30	38	1.80	− 1.22	0.70	0	5	13	7	11	s.	Garrett V. List.
Washington	Daviess	484	15	76.0	+ 0.1	104	10	50	29	39	1.73	− 2.16	0.60	0	5	10	10	11	sw.	Charles C. Feagans.
Whitestown	Boone	529	3	73.0	.....	101	10	50	30	37	2.99	.....	1.49	0	7	8	21	2	ne.	Clyde O. Laughner.
Winona Lake	Kosciusko	865	4	71.8	.....	100	10	45	30	38	2.38	.....	1.26	0	4	4	24	3	w.	Rev. Albert A. Young.
Worthington	Greene	526	29	75.5	+ 1.9	102	10	50	30	35	1.76	− 1.55	1.10	0	6	9	16	6	sw.	D. W. Solliday.
Illinois.																			
Albion	Edwards	531	20	77.1	+ 0.3	100	17	51	30	33	1.22	− 1.31	0.58	0	7	16	12	3	sw.	B. F. Michels.
Carmi	White	399		.....	.....	.....	.....	.....	.....	.....	3.23	.....	1.01	0	9	17	0	14	ne.	Daniel Berry.
Charleston	Coles	720	26	74.0	− 0.3	97	10	47	30	38	3.19	+ 0.29	1.25	0	8	8	15	8	s.	Jacob B. Daisy.
Danville	Vermilion	604	10	74.8	+ 1.0	101	10	49	20†	43	3.73	+ 0.94	1.91	0	6	15	9	7	sw.	J. J. Lemon.
Equality	Gallatin	421	13	76.6	− 1.6	98	11†	52	30	33	6.97	+ 3.32	2.81	0	11	.....	.....	.....	s.	Dr. L. W. Gordon.
Fairfield	Wayne	495	18	77.1	+ 1.0	102	10	49	30	38	2.53	− 0.48	0.65	0	8	16	3	12	s.	George A. Tromly.
Flora	Clay	495	25	73.2	− 1.5	99[a]	17	46	30	39[a]	3.92	+ 0.52	0.90	0	8	19	9	3	se.	Joseph S. Peak.
Golconda	Pope	500	33	77.0	− 0.8	99	12	54	21	36	5.40	+ 2.24	1.94	0	13	9	9	13	sw.	Dr. D. Lawrence.
Hoopeston	Vermilion	715	9	71.4	.....	97[a]	10	39	20†	35[a]	2.92	.....	1.58	0	9	19	9	3	.....	S. F. Hoskinson.
McLeansboro	Hamilton	462	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. C. Robinson.
Metropolis	Massac	346		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. N. McCartney.
Montrose	Effingham	399	11	74.8	− 0.9	98	10†	46	30	39	5.00	+ 2.44	3.04	0	11	10	20	1	sw.	J. C. Spitler.
Mount Carmel	Wabash	424	10	76.2	+ 0.1	99	17	52	30	30	2.28	− 0.82	0.72	0	9	.....	.....	.....	.....	Mrs. H. M. Phillips.
New Burnside	Johnson	556	16	75.0	− 2.9	95[a]	9†	48	30	36[a]	4.09	+ 1.48	0.97	0	10	14	5	12	.....	Mrs. George Harris.
Olney	Richland	486	24	76.6	+ 0.3	101	10	49	29	37	2.40	− 0.53	0.75	0	8	8	10	13	sw.	Victor E. Phillips.
Palestine	Crawford	500	29	76.0	+ 1.7	101	10	47	30	38	1.78	− 1.60	0.75	0	7	10	12	9	s.	Duane Shaw.
Paris	Edgar	600	18	73.7	− 1.4	100	10	46	30	40	2.28	− 0.48	0.72	0	5	12	14	5	so.	H. P. Twyman.
Philo	Champaign	700	27	72.8	+ 0.1	97	10†	48	30	46	2.63	− 0.18	2.05	0	5	13	14	4	sw.	H. A. Burr.
Rantoul	.do	768	20	73.4	− 0.4	99	16	47	29	28	5.19	+ 1.88	2.12	0	10	22	3	6	ne.	William Breiner.
Robinson	Crawford	500	11	75.7	+ 0.4	102	10	48	30	36	2.66	− 0.85	0.61	0	8	18	4	9	sw.	A. P. Woodworth.
Sumner	Lawrence	459	5	75.7	.....	98	10	50	30	30	1.80	.....	0.71	0	5	12	9	10	n.	O. A. Fyffe.
Tuscola	Douglas	644	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. W. Lester.
Urbana	Champaign	725	9	73.0	.....	97	10†	49	30	36	3.35	.....	1.62	0	5	8	20	3	ne.	Prof. J. G. Mosier.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911, District No. 3.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
New York.																																	
Allegany	Allegany		.41	1.35	.16		.50		.25		.07					2.02	.25		.16							.81		2.40	1.29			.01	9.68
Bolivar	do		.06	.10	.51		.14		.12							.95		.10	.20						.05	.22	.65	.17	.03	1.11	.15		.06	4.62
Olean ‖	do			.89	.94	.14		.08		.24		.07	.02			.51	.94	.21	.10	.23					.08	.04	.78	.40		.45	1.62			7.74
Pennsylvania.																																	
Aleppo	Ohio					.25		.10						1.12	T.	1.12									.05	.45	.52	.07	.27	1.77	.42			6.14
Baldwin	Allegheny	T.	.15	2.00					.10	.05			T.			.12			.52						.30	1.57	.05	.20	2.00	.70				7.76
Brookville	do		.25	.25	1.30	1.64			.54							2.00		.06	.23					.05	1.00	1.85	.09		1.85	.67				11.78
Clarion ‖	do			.32	.06				.04							.30	1.10	.06		.18					.12	1.85	.94		1.92	2.07				9.46
Claysville	Ohio	.02		.28		1.65			.44					.81	.25	.32	T.								T.	.95	.42	1.32	.77	1.56	.09			7.88
Confluence ‖	Yough'ny		.60	.08	.16				.12	.40				.25	.06	.35	.43								.10	.20	.92	.32	.04	.52	2.15	1.30		8.00
Davis Island Dam ‖	Ohio		T.	.67	.92				.10	.03				.17	.49	.04	.16		.34						.56	.47	.31	T.	.41	1.89	T.			6.56
Derry Station	Allegheny			.65										.28	.18	.07			.16						.14	.84	.25		.25	1.06	.29	.04		4.21
Franklin ‖	do			.37	.47		.20		.10							.18	1.51	.02		.26				.19	.27	1.35	.14		.16	1.53		.01		6.76
Freeport ‖	do			.66	.26									.08	.15	.01	.21		.05	.06					.66	.98	.30		.06	1.82				5.30
Greensboro ‖	Monong'ela			.56	.20	T.			.20	.02				.90	.30	.40	.46		.06						.02	.56	.64	.10	.10	.50	1.74	.32		7.08
Greensburg	Yough'ny		.47	.15					T.					.34	.19	.23		T.	.11					T.	.05	.65	.33	.06	.13	1.21	.19	.01		4.12
Greenville	Ohio			1.73					.20				T.		T.	.41			.33					.34	.64	.99	T.	.60	2.65	.13				8.02
Grove City	do		.18	.33	.03	T.			.45				T.		.01	.01			.80					.65		1.88		.08	1.50	.35				6.27
Herrs Island Dam ‖	Allegheny			.27	1.63		T.		.03	T.				.31	.28	.02	.30	T.	.14	T.					.32	.71	.37	.02	.06	1.94	.05			6.45
Indiana	do		.10	.32	.49											.23			.12						.45	.67	.10		.32	1.18	.05			4.03
Irwin	Monong'ela	T.	.03	.82										.26	.21	.47	.01		.22						.06	1.14	.63	.02	.60	1.43	.07			5.97
Johnstown	Allegheny	T.	T.	.03	2.25				.10					.06	.04	.28		.28	.19						.56	.65	.34	.23	.01	1.14	.65	.21		7.02
Lock No. 4 ‖	Monong'ela			.35	1.10				T.					.12	.28	.21	.20		.45	.06					T.	.55	1.25	.05	.52	1.25	.52	.14		7.05
Lycippus	Allegheny		.07	.88	T.									.35	.20	.72			.19						.26	.81	.50	.06	.05	.08	.55	.08		5.80
Parkers Landing ‖	do			.94	.98				T.	.18					.02	.06	1.08			.54				.02	.35	1.40	.46		1.24	1.30				8.57
Piftsburgh	Ohio		.21	1.27				.05	.01					.35	.29	.20		.12	T.					T.	.66	.77	T.	.01	1.52	.84	T.			6.30
Saegerstown	Allegheny	.03		.58		.02	.02						.02			1.61		.05	.07					.12	.27	.70	.02	.10	2.27	.16				6.04
Saltsburg ‖	do			.68	.06	.04								.02	.02	.18	.02		.28	.08					.01	.56	.54	.01	.02	1.02	.62	.06		4.22
Skidmore	Ohio																								.60	1.40			1.40					3.40
Somerset	Yough'ny	.26	.55	.26	.21										.40	.35									.50	.35		.30		2.70	.53	.30		6.71
Springdale ‖	Allegheny		.02	.58	.62				.03					.05	.37	.03	.28		.21	.02					.39	.65	.39	.02	.53	1.59	.02			5.80
Uniontown	Monong'ela		.12	.83	1.00					.02				.57	.28	.80			.15					T.	.36	.72	.36	.07		2.12	.63	.12		8.10
Warren	Allegheny	.20	.70	.70	.05			.08		.16						1.45		.34	.10						.58	.60	.11		2.36	.15				7.58
West Newton ‖	Yough'ny			.74	.36				.05					.14	.22	.16	.28		.14						.01	.54	.86	.06	.42	1.00	.59	.14		5.71
Maryland.																																	
Deer Park	Yough'ny	.09	.86	.81	.61						.10	1.00		.12	.93	.10		.50							.59	.81	.35	.41	.05	2.25	.95	.83		11.36
Grantsville	do	.02	.20	1.00	.55			.02	.21					.06	.50	.90									.84	.57	.15	.85	1.00	2.00	.92	1.20		10.99
Oakland	do	1.76	.70	1.80	.71			.06					.06	.40		.79			.45						.27	.78	.37	.06		2.25	1.24	1.03		12.73
West Virginia.																																	
Bancroft ‖	G. Kanawha	.03			.13	.02		.02	.02							.02	.10	T.	.06						.17	.13	1.27	.14	.08	.25	2.75	2.45		7.34
Beckley	do				.20									.24		.26										.10			.70	.73	.53			2.76
Bens Run	Ohio		.03													.68			.14						.01	.94				1.65	.81	.10		4.36
Bluefield	G. Kanawha	.07		.15		.70								.10	.70	.51			.69							.40		.20	.20	.35	.37	.35		4.79
Brandonville ‖	do			.20			.75		.55	.25				.29	.42		1.60	.10							.52	.55		.39		1.95	1.75	1.09		10.41
Buckhannon	do	T.	.40	T.		T.									.15	.30			.13							.25	.32				3.15	1.50	.78		6.98
Cairo	L. Kanawha				.20	.10												.50								.52	.16				2.00	1.40	.10		4.98
Central Station	Mid. Is. Cr'k	T.	T.	.43		.01		.01	.08					T.	.57	.63			.41						.04	1.09	.42	.04	.32	2.00	1.52	.15		7.72
Charleston ‖	G. Kanawha	.06		.15				T.	.03	.58					.24	.03	.14		.25							.08	.33	.33	.38	1.66	2.05	1.57		7.88
Creston ‖	L. Kanawha			.04	.02												49		T.						T.	.51	.55			.12	2.60	.93		5.26
Cuba	Sand Creek		.13	.07		.05	.04								.12	.34	.04		.04						T.	1.58	T.	.04		1.55	1.60	.08		5.68
Davis ‖	Monong'ela																																
Elizabeth ‖	L. Kanawha		.04	.30												.09	.23		.13							.46	.50	.01		.50	2.85	.80		5.91
Elkhorn	Big Sandy	.04	.10	.75	.11	.15	.20	T.					.30	.05	T.	.05			.11							2.00	.50			.10	.28	.13		4.37
Elkins	Monong'ela	T.	.14	.25	2.44			.03	.76			.03	.29		.46	.33			.24						.23	.28	.56	.21	.09	1.31	1.48	1.29		10.42
Fairmont ‖	do		T.	.13	.01				.04					T.	.04	1.35	1.28		.54						.12	.20	.78	.17		.88	1.90	.70		8.14
Glenville ‖	L. Kanawha			T.		.30			.23							.18	.25		T.							.25	.78	.10	T.	.95	2.70	2.71		8.45
Grafton	Monong'ela	.95		.02	.05				.97	.67				.03		1.12			.46						.11	.54	.73	.53		3.71	1.02	.59		11.50
Green Sulphur Sp'gs	G. Kanawha	T.		.02		.78			.16	.35			.11	.02	.02	.21	.30	T.								.05	.35		.26	.30	1.17	.42		4.52
Hinton ‖	do		.08		.06	.70	.28	.30	.12	.50				.20	.18	.04	.14			.04						.02	.26			.54	1.46	.55		5.47
Huntington ‖	Ohio			.16	.10									.06	.54		.12		.04							.24	.84				2.54	1.18		5.82
Lewisburg	G. Kanawha	.04			.29	.20			.15				1.47	.14	.31	.48	.21									.83	.24			.11	.53	.96		5.96
Logan	Guyandotte																																
Lost Creek	Monong'ela		.89	T.											.07	.30									.06	1.80	.21	.13	.06	2.55	1.70	.31		8.08
Madison	G. Kanawha																																
Mannington	do		.01	.33										.20	.08	.55	T.		.25						.27	1.04	.56	.24		1.96	1.12	.11		6.72
Marlington	do			.23	T.	.29	.29	.51					.50	.02		.22	.05			.04						.08	.15				2.42	.65	1.09		6.54
Morgantown	Monong'ela		.43	.20					.84					1.33		1.70			T.						.10	.93	1.01	.17		2.55	.56	.29		10.11
Moundsville	Ohio		T.	.25										.63	T.	.85			.01						.19	.52	.47	.04	.58	2.03	.11			5.68
New Cumberland	do																																
New Martinsville	do					.38								.36		1.60			.12						.05	.81	.62		.08	1.61	.63			6.26
Nuttallburg	G. Kanawha		T.	T.				1.36	.70				.20															.30	T.	1.03	.78	.62		4.99
Parkersburg	Ohio	.02	.37	T.	.18	.01		.10					T.		.07	.34		.54						.04	.28	1.19			.02	1.87	.73	.03		5.79
Parsons	Monong'ela		T.	T.					.70											.75						•	•	•	2.35		•	•	4.65		8.45
Philippi	do		.10	.18	.17	T.		T.	.52	1.57				.04	.06	.39			.19						T.	.87	.36	.09		3.73	1.08	.55		9.90
Pickens	do		T.		T.	.34								T.	.37	T.			.21						.16	.49	.16	.40		1.50	1.07	.85		5.35
Pineville	Guyandotte																																
Point Pleasant ‖	Ohio		.04	.22											.12	.02	1.00		.06							.64	.48	.06		.08	2.00	.68		5.40
Powellton	G. Kanawha	.03	.12	T.		T.		.05					.02		T.	.07	.01		.15						T.	.10	.05	.14		.30	.83	.50		2.38
Princeton	do	.15		.75	.60				.15					.10		.50			.75						.10	.75			.15	.40	.60			5.00
Robertsburg ‖	do	.59	.15	.14		.64											.55									.33	.96			.08	2.70	1.39		7.53
Rowlesburg ‖	Monongahela				1.04	.02			.26						.06	.12	.72		.40	.02							1.00		.15	.10	1.70	1.95	1.20		8.74
Ryan	G. Kanawha	.01	.34	.05				T.					.01	.02	.20	.25									T.	.66	.74		.46	1.17	4.37	.08		8.36
St. Marys ‖	Ohio													20			1.04	.64	.36							40	1.00	.02		.38	2.00	.60		6.64
Smithfield ‖	Fish'g Creek		T.	.27	.18			T.						09		.18	.36		.47							56	1.58	.10		.98	1.19	.36		6.32
Spencer ‖	L. Kanawha		.10	.15		.80		T.	.04						.10	.20	.35		.32										23	.26	2.90	2.93		8.38
Sutton ‖	G. Kanawha					1.10							T.		T.		.92									35	.65	.22	.60	.50	1.58	T.		5.92
Terra Alta	Monongahela	.20	.36	.78	.84			.19						.22	.26	1.42			.28							36	1.45	.12		3.80	.35	1.51		12.14
Union	G. Kanawha		.20		.22	.90			T.	.36					1.55		.78									1.05		.30	.20	.33	1.00			6.98
Valley Fork	do															.77										40				1.30	1.00	.95		4.42
Webster Springs	do		T.		.02	T.		T.	T.	.10			T.	.12	.40	.20		T.	.12	.05						.60	.23	.10	.40	.52	.70	.83		4.39
Wellsburg	Ohio			.28				.12						.20	.60	.35		T.							.51	1.01	.02	.14	.30	1.01				4.54
Weston ‖	Monongahela		.08			.12										.10	.22	.04							.02	.06	.94	.10	.12	2.00	1.59	.40		5.70
Wheeling ‖	Ohio			.07	.01		T.			T.				.80	.25	.23	.40								T.	.53	1.07	T.	.20	1.85	.34	T.		5.75
Williamson ‖	Big Sandy	.02	.02	.32		.18		.04	.06					.34	.58					.02							.02	.02			.26	.50			2.38

TABLE 2.—*Daily precipitation for August, 1911, District No. 3*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Ohio.																																	
Amesville	Ohio	....	.28	.04	....	....	.04	.46	....	....	....	....	....	T.	.53	1.22	.02	....	....	....	....	....	....	....	.35	1.35	.13	....	....	2.76	.08	.02	7.28
Bangorville	Muskingum	.95	.40	.31	....	....	....	T.	....	....	....	....	.04	.73	.37	.30	....	T.	....	....	....	....	....	.05	1.17	1.08	....	T.	1.28	....	....	....	6.68
Bellefontaine [1]	Great Miami	....	.88	.60	.23	T.	....	....	....	....	....	....	.08	.86	T.	.49	....	....	.09	....	....	....	....	.02	.60	1.21	.23	....	.06	.04	....	....	5.39
Bladensburg	Muskingum	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cadiz	Ohio	....	.41	.85	....	....	....	T.	.46	....	....	....	....	.36	.34	1.70	T.	.40	....	....	....	....	....	....	.43	1.37	....	.04	1.15	.62	....	....	8.13
Cambridge	Muskingum	....	.75	.17	....	....	....	.17	.29	....	....	....	.01	.90	.33	1.96	....	....	....	....	....	....	....	T.	.54	1.33	....	.13	.38	.41	....	....	7.37
Camp Denison	Ohio	.27	.26	1.00	.24	.05	.02	....	....	....	....	....	....	T.	....	1.04	....	....	....	....	....	....	....	....	.24	.54	....	....	.04	....	....	....	3.70
Canal Dover	Muskingum	T.	.67	.23	....	....	.83	.04	....	....	....	....	T.	T.	.77	1.00	....	....	....	....	....	....	....	.04	.50	2.00	....	....	.72	.47	....	....	7.27
Canton [1]	....do....	....	.32	.13	.22	....	.97	....	....	....	....	....	....	.33	1.54	.20	.03	....	.05	.01	....	....	....	.50	.17	1.50	.35	....	.05	1.40	....	....	6.87
Cardington	Scioto	.55	.26	.14	....	....	....	....	....	....	....	....	.34	....	....	.22	....	....	....	....	....	....	....	.05	1.33	.59	....	....	1.05	....	....	....	4.53
Chillicothe [1]	....do....	....	.08	....	....	1.18	....	....	....	....	....	....	....	....	1.31	.71	....	....	....	....	....	....	....	....	.70	.69	....	....	.18	....	....	....	4.85
Cincinnati	Ohio	.30	.32	.85	.29	.19	....	....	....	....	....	....	....	....	....	.15	....	....	....	....	....	....	....	....	.20	.62	....	....	.14	....	....	....	3.06
Circleville [1]	Scioto	....	1.00	.21	.02	.02	....	....	.07	....	....	....	....	.02	.09	.41	.99	....	.04	....	....	....	....	T.	.08	.49	.94	.01	.08	.23	....	....	4.70
Clarington	Ohio	T.	T.	.10	....	.70	....	....	....	....	....	....	....	.32	.05	1.75	....	....	.07	....	....	....	....	T.	T.	.60	.40	.40	.55	1.50	.40	....	6.84
Columbus	Scioto	.14	.07	.24	....	....	....	....	....	....	....	....	.46	.28	T.	.17	....	.12	....	....	....	....	....	.07	.57	.96	....	....	.54	....	....	....	3.62
Coshocton [1]	Muskingum	....	.60	.30	.13	.06	.33	....	.08	....	....	....	....	1.02	.25	.70	.02	....	.08	....	....	....	....	....	.40	1.60	.90	....	.70	.20	.60	....	7.97
Dayton	Great Miami	.38	.15	.35	.27	.05	....	....	....	....	....	....	T.	....	.46	....	.07	....	.03	....	....	....	....	.02	.21	.84	....	....	.42	....	....	....	3.25
Do	....do....	.15	.32	.36	.24	.05	....	....	....	....	....	....	....	.48	....	.18	....	.04	....	....	....	....	....	.01	.13	1.03	....	....	.50	....	....	....	3.58
Delaware	Scioto	.07	.02	.16	....	....	.02	....	....	....	....	....	.16	.24	....	T.	....	.97	....	....	....	....	....	.01	.94	.76	T.	....	.87	....	....	....	4.22
Demos	Ohio	....	.01	.38	.68	T.	....	....	....	....	....	....	....	.89	.67	.55	....	....	.02	....	....	....	....	T.	.20	1.34	.12	.09	.09	1.79	.01	....	6.84
Dennison	Muskingum	....	.32	.34	.17	....	.04	T.	....	....	....	....	T.	.29	.35	.38	....	....	.03	....	....	....	....	T.	.51	1.96	....	T.	.87	.54	....	....	5.80
Frankfort	Scioto	T.	.34	T.	....	....	....	....	....	....	....	....	....	.70	T.	.25	....	....	....	....	....	....	....	1.00	.55	1.50	....	....	.30	.35	....	....	4.99
Garretsville	Mahoning	.27	.90	.03	....	T.	.91	....	....	....	....	....	.02	....	.18	.37	....	T.	.03	....	....	....	....	.09	.72	.96	....	.66	1.24	....	....	T.	6.38
Granville [1]	Muskingum	....	.53	.30	.04	....	....	....	T.	....	....	....	.10	.10	T.	.23	.65	....	.11	....	....	....	....	.07	.23	1.21	.55	.07	.63	.45	....	....	5.27
Gratiot	....do....	.08	.63	.32	....	....	.44	....	....	....	....	....	.15	.07	T.	.75	....	1.22	....	....	....	....	....	.06	.39	1.50	....	....	.83	.55	....	....	6.99
Green	Ohio	....	T.	T.	....	....	....	....	....	....	....	.32	T.	T.	.98	....	....	....	....	....	....	....	....	....	T.	1.23	T.	T.	T.	2.75	.60	T.	5.88
Green Hill	Muskingum	....	.73	.60	T.	T.	T.	....	T.	....	....	....	.02	.10	1.03	.14	....	T.	T.	....	....	....	....	.18	.33	1.23	T.	.11	1.33	T.	....	.03	5.83
Greenville	Great Miami	....	.02	.10	.15	.72	.03	....	....	....	....	....	.53	.04	.37	.06	.22	....	.37	....	....	....	....	....	.31	.63	.21	....	....	.53	....	....	4.29
Haydenville	Ohio	....	.28	.20	....	....	T.	....	....	....	....	....	.02	T.	.06	.31	....	....	.02	....	....	....	....	....	.20	1.26	....	....	....	.42	1.15	....	....	3.92
Hillsboro	Scioto	.46	.23	.55	....	....	....	....	....	....	....	....	....	.24	....	.74	....	....	.05	....	....	....	....	....	.15	2.16	.14	.42	.27	....	....	....	5.41
Ironton	Ohio	.10	....	....	....	....	....	....	....	....	....	....	.62	.22	.05	.46	....	....	....	....	....	....	....	....	.10	.45	.15	....	.08	.60	.96	.05	3.84
Jacksonburg	Great Miami	.27	1.00	....	....	.70	....	....	....	....	....	....	....	.43	....	.66	....	.80	....	....	....	....	....	.05	....	.80	....	.26	....	....	....	....	4.97
Kenton	Scioto	.15	.42	.68	....	....	....	....	....	....	....	....	.23	.51	....	....	....	....	....	....	....	....	....	....	1.51	.47	....	....	.88	....	....	....	4.85
Killbuck	Muskingum	....	.70	.15	....	....	.04	T.	....	....	....	....	T.	.40	1.60	.35	....	T.	.06	....	....	....	....	.07	.65	1.40	.45	.16	.48	.18	....	....	6.69
Lancaster	Ohio	T.	1.20	.45	....	....	....	T.	....	....	....	....	T.	.22	.02	.74	....	....	....	....	....	....	....	T.	.78	1.59	.05	.05	.20	.20	....	....	5.50
McConnelsville	Muskingum	.46	.46	.13	....	....	....	.03	....	....	....	....	.01	.06	.39	.88	....	....	....	....	....	....	....	T.	.35	1.20	....	.44	1.80	.04	....	....	6.25
Marietta	Ohio	....	.16	.08	.12	....	....	....	....	....	....	....	....	....	....	1.64	....	....	.13	....	....	....	....	....	.04	1.04	.11	....	.08	1.77	.77	.03	5.97
Marion	Scioto	T.	....	.23	....	....	....	....	....	....	....	....	.10	.45	....	.79	....	....	....	....	....	....	....	.06	1.13	.60	....	.08	.68	....	....	....	4.12
Millfordton	Muskingum	.53	.04	.07	....	....	....	....	....	....	....	....	....	.45	.26	T.	....	.73	....	....	....	....	....	....	.40	2.01	....	....	.42	....	....	....	4.91
Milligan	....do....	....	.72	.22	....	....	....	.10	....	....	....	....	.03	....	.34	2.02	....	....	....	....	....	....	....	....	.12	1.39	....	.25	.33	.26	....	....	5.78
Millport	Ohio	....	.10	.31	.30	....	....	....	.45	....	....	....	.02	.20	.94	.24	....	.02	....	....	....	....	....	.18	.32	2.25	....	T.	1.15	.32	.03	T.	6.83
Nellie	Muskingum	....	.65	....	T.	.83	....	....	....	....	....	....	....	1.60	.10	.30	....	....	.11	....	....	....	....	.11	.30	1.30	....	.70	1.20	.46	....	....	7.66
New Alexandria	Ohio	....	....	T.	T.	1.20	....	....	....	....	....	....	....	.40	.30	.40	....	....	....	....	....	....	....	....	.40	1.40	.20	.10	2.10	T.	....	....	6.50
New Berlin	Muskingum	....	.50	.24	....	.05	....	....	....	....	....	....	....	.06	1.14	....	....	.15	....	....	....	....	....	.17	.52	1.30	....	....	1.30	.10	....	....	5.53
New Waterford	Ohio	....	T.	....	.25	....	....	.10	....	.15	....	....	T.	T.	2.17	T.	....	....	T.	....	....	....	....	.10	....	....	1.82	....	1.18	....	....	....	5.77
Ohio State Univ	Scioto	.59	.56	.15	....	....	....	....	....	....	....	....	.17	.29	.22	.23	....	.07	....	....	....	....	....	.07	.12	1.53	....	....	.63	....	....	....	4.63
Pataskala	Muskingum	.86	.42	.05	....	T.	....	T.	....	....	....	....	.18	.12	....	.16	....	.05	....	....	....	....	....	.04	.60	1.23	....	.05	.91	.05	....	....	4.72
Peebles [1]	Ohio	.22	.04	.02	....	.70	....	....	....	....	....	....	....	....	1.83	....	.68	....	....	....	....	....	....	....	.05	.37	.87	....	.09	....	1.22	....	6.09
Philo (1)	Muskingum	T.	.48	.33	....	....	.48	T.	....	....	....	....	.16	.14	T.	.74	....	....	T.	....	....	....	....	.04	.12	1.83	....	.15	.51	.26	....	....	5.24
Piqua [1]	Great Miami	.33	....	1.80	.22	.14	....	....	....	....	....	....	.80	1.26	....	.17	....	....	.38	....	....	....	.14	....	....	.90	.25	....	....	....	....	....	6.39
Plattsburg	....do....	T.	T.	T.	T.	1.12	....	....	....	....	....	....	.15	.59	.12	.94	.03	....	....	....	....	....	....	.06	1.12	1.24	....	....	1.20	....	....	....	6.57
Portsmouth [1]	Ohio	.62	.02	.07	....	....	....	....	.04	....	....	....	....	....	.36	.05	.24	....	.06	....	....	....	....	....	.09	.38	.72	....	.02	2.40	.75	.04	5.86
Prospect [1]	Scioto	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rittman	Muskingum	1.85	....	....	....	T.	....	....	....	....	....	....	....	.05	1.10	....	....	.15	T.	....	....	....	....	.10	.75	.75	.40	.80	1.20	.10	....	....	7.25
Shenandoah	....do....	.83	.10	.09	....	....	....	T.	....	....	....	....	T.	T.	2.11	T.	....	.07	....	....	....	....	....	.22	.98	.33	....	....	2.00	....	....	....	6.73
Sidney	Great Miami	T.	3.00	1.53	.04	....	....	....	....	....	....	....	.39	1.66	.07	.49	....	.12	....	....	....	....	....	.04	1.15	.12	....	....	.63	....	....	....	9.24
Somerset [1]	Muskingum	....	.03	1.44	T.	....	.04	T.	....	....	....	....	.13	.59	....	.60	1.40	....	....	....	....	....	....	T.	.15	1.50	.64	....	....	.50	....	....	7.02
Springfield	Great Miami	.10	.16	.30	.32	....	....	....	....	....	....	....	.76	.77	....	.87	....	.29	....	....	....	....	....	.02	.08	1.40	....	....	.40	....	....	....	5.47
Summerfield	Ohio	T.	.13	T.	....	....	....	T.	....	....	....	....	....	.50	.60	1.34	....	....	....	....	....	....	....	T.	.21	1.74	.03	.04	.25	2.35	....	.02	7.21
Syracuse	....do....	....	*	*	.15	....	....	....	....	....	....	....	....	....	T.	1.00	....	....	.30	....	....	....	....	....	.06	.76	.03	T.	.01	1.55	1.38	.05	5.29
Thurman	....do....	T.	T.	....	T.	....	....	....	....	....	....	....	....	....	.20	1.05	....	....	....	....	....	....	....	T.	....	.85	.25	T.	....	.70	.48	....	....	3.53
Urbana	Great Miami	.15	.15	.45	.04	....	....	....	....	....	....	....	.45	.90	....	.85	....	.45	....	....	....	....	....	T.	.29	.90	....	....	.36	....	....	....	4.99
Warren	Mahoning	....	.78	.18	....	.14	.07	....	....	....	....	....	T.	....	.16	.04	....	....	.13	....	....	....	....	.12	.97	.88	....	.17	1.75	....	....	....	5.39
Waverly [1]	Scioto	....	.14	1.21	T.	.28	....	....	....	....	....	....	....	....	.21	.05	.43	T.	....	....	....	....	....	....	T.	.63	.74	.05	....	.51	1.23	T.	5.48
Waynesville	Great Miami	.38	1.60	.40	....	....	....	....	....	....	....	....	....	.05	....	.10	....	....	....	....	....	....	....	.05	.40	.58	....	....	.20	....	....	....	3.76
Wooster	Muskingum	T.	.17	.19	....	.02	....	T.	....	....	....	....	.04	.08	.80	....	....	T.	....	....	....	....	....	.49	.94	1.39	.01	T.	1.05	.01	....	....	5.19
Youngstown [1]	Mahoning	.43	....	.08	.23	....	1.02	....	.21	....	....	....	....	.03	.15	....	....	....	....	10	....	....	....	.15	.20	1.35	.40	.04	.30	3.10	....	....	7.79
Zanesville [1]	Muskingum	....	.32	.25	....	....	.02	....	....	....	....	....	T.	.15	....	.17	.26	....	.23	....	....	....	....	T.	.41	.94	.69	.06	.10	.53	....	....	4.13
Virginia.																																	
Big Stone Gap	Tennessee	T.	....	.45	T.	....	.25	.25	....	....	....	....	.15	.25	....	.55	T.	....	.30	....	....	....	....	....	....	T.	T.	....	.35	....	T.	....	2.55
Blacksburg	Kanawha	.12	....	.04	.02	1.20	....	....	.80	....	....	....	1.21	.09	....	.16	....	....	.21	....	....	....	....	.04	.02	.14	....	.11	.16	.24	.75	5.34
Burkes Garden	Tennessee	T.	....	.39	T.	....	T.	.63	....	....	....	....	....	....	....	.25	....	....	.85	....	....	....	....	....	T.	.36	....	.28	T.	.64	.29	3.69
Elk Knob	....do....	.05	.41	.24	.02	....	.04	T.	.39	....	....	....	.95	.52	T.	.62	T.	....	.33	....	....	....	....	....	.02	.03	....	T.	T.	.10	.04	3.76
Ivanhoe	Kanawha	.04	.03	....	.33	.64	.06	T.	T.	....	....	....	....	2.62	.03	.64	.18	....	.03	.17	....	T.	....	....	.14	.05	.37	.04	.37	.90	.45	7.09
Lebanon	Tennessee	....	T.	....	.13	.32	.44	.06	....	....	....	....	....	T.	....	.12	....	....	.82	....	....	....	....	....	....	.35	....	.06	T.	.16	.06	2.52
Marion	....do....	.45	....	.26	T.	1.22	.17	.06	....	....	....	....	.02	.09	.10	.57	.02	....	.36	....	....	....	....	....	.09	.10	.15	.07	.11	T.	.63	4.47
Max Meadows	Kanawha	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mendota [1]	Tennessee	....	.25	....	.25	....	....	.10	....	....	....	....	....	.30	....	.20	....	.60	....	....	....	....	....	....	.10	.08	.05	.06	.05	.06	.19	2.29
Mountain Lake	Kanawha	....	....	....	....	....	....	....	....	2.50	....	....	1.44	T.	T.	.50	....	....	.10	....	....	....	....	....	.30	.40	T.	....	.30	T.	1.60	.16	....
Radford [1]	....do....	....	....	....	....	1.00	.20	....	.44	T.	....	....	....	1.10	....	....	.08	....	....	.04	....	....	....	....	....	....	....	1.10	....	.32	.28	.76	5.32
Speers Ferry [1]	Tennessee	.20	....	.08	....	....	.08	....	.30	....	....	....	....	....	....	....	.60	....	....	....	....	....	....	.08	....	.10	....	....	.20	....	....	....	1.64
Wytheville	Kanawha	.01	T.	.23	.08	.09	.02	.10	....	....	....	....	1.92	T.	T.	.16	....	....	.26	....	....	....	....	....	.86	.25	.33	.01	.26	.58	.44	1.38	6.98
North Carolina.																																	
Altapass	Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.04	1.00	....	3.15
Andrews	....do....	....	....	.77	....	....	.21	.68	.11	....	....	....	....	.02	....	.08	....	....	.12	....	....	.12	....	....	....	....	....	....	....	....	....	....	....	....
Asheville	....do....	.12	.09	.73	.03	.15	.30	1.13	....	....	.05	....	2.83	.02	....	.07	....	....	T.	....	....	....	....	....	1.13	1.16	.01	.39	.08	.23	.11	8.63
Banners Elk	....do....	.04	.05	.66	.54	.06	.62	.60	....	....	....	....	.07	....	....	.25	.05	....	....	.76	....	....	.05	....	.20	.50	....	.37	.63	1.00	.50	6.95
Brevard	....do....	.69	.13	.60	.20	.07	.91	.13	....	....	....	....	....	.60	....	.73	....	....	....	T.	....	....	....	....	.10	T.	.07	.30	.90	.96	.30	6.69
Bryson City [1]	....do....	....	.25	.09	.80	....	....	....	....	....	....	....	....	.12	.18	.03	....	....	....	....	....	....	....	....	....	.20	.30	....	.27	.21	.97	3.42
Cullowhee	....do....	.15	.12	1.17	.25	....	....	.02	....	.01	....	T.	.46	.05	.09	.04	T.	....	.01	....	....	....	....	.05	.05	.45	.01	....	T.	.15	.38	3.46
Eagle Nest	....do....	.02	.08	1.33	.05	....	....	.54	....	....	....	....	.06	.28	....	.23	....	....	....	....	....	....	.01	....	.14	.66	....	.08	.19	.17	.23	4.07
Hendersonville	....do....	.19	.55	.56	.12	....	....	.64	....	....	....	....	....	.04	.22	.05	....	....	....	....	....	....	....	....	.10	.33	....	.32	.67	1.61	.11	5.51
Highlands	....do....	.82	1.10	2.20	.80	....	....	.28	....	.40	....	....	....	.90	....	.20	1.30	....	.08	....	....	....	....	....	.30	.83	.65	.04	.50	2.80	.13	13.33
Hot Springs	....do....	.12	.01	.08	....	....	1.10	....	.04	....	....	.83	T.	....	....	.34	....	....	.36	....	....	....	....	....	....	....	....	.05	.38	.31	.07	.29	3.98
Jefferson	G. Kanawha	.20	....	1.17	T.	.14	T.	.91	....	....	....	....	....	....	....	.08	....	....	....	....	....	....	....	....	T.	.40	.14	.60	.52	1.49	.71	6.36
Marshall	Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Murphy [1]	....do....	.03	.05	.47	.23	....	....	.82	....	....	.47	....	....	.40	....	.62	.08	.01	....	.40	....	....	.02	....	....	....	....	.17	....	.06	.28	4.11
Rock House	Savannah	.63	2.09	1.30	.10	.59	1.00	.40	....	.02	....	....	....	.09	.04	.03	....	.04	....	.09	....	....	....	T.	.71	.71	.36	.24	.80	3.97	.11	13.32
Waynesville [1]	Tennessee	.01	.42	.84	.30	.03	....	.19	.03	....	....	....	....	.03	.05	.10	....	....	....	....	....	....	....	....	....	.35	....	....	.14	.19	.67	3.35
Georgia.																																	
Diamond	Tennessee	.12	.03	.14	.04	....	....	.64	....	....	....	....	....	T.	T.	T.	....	.18	.82	....	....	....	....	....	T.	....	.30	....	.11	.26	.04	2.68
Mineral Bluff	....do....	.03	.55	.90	....	....	....	.17	....	....	.01	....	....	.07	.43	.21	....	....	.39	....	....	.04	.02	....	....	.57	....	....	....	1.35	....	4.74

TABLE 2.—*Daily precipitation for August, 1911, District No. 3*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Alabama.																																	
Bridgeport		Tennessee	1.83	.56	.04	.06				.60	.04					.45	.03			.13	.02	.15								.36		.03	4.30
Decatur		do	.13	1.19	.29			1.32	.80	.05	.01			.11	.03	.53			.10	.01	.34	T.										4.91
Florence		do	1.10	.50	.06	.30	1.65			.36				.10		.60	.04		.12	.40	.70								.09				6.02
Guntersville		do	.12	.62	.60			.08		.26	.18		T.	.94	.03	.05			.45	.10	.25					.06		.06	.10				3.90
Madison		do	.86	.94			.75		.46	.74	.27			.56	.10	.43				.50	.15					.22	.28	.22					6.48
Riverton		do	.73	.40	.80	.01	.04	.30	.08	.05	.05				.06	.04	.18	.02		.03	.18	.13						.49	.09	.04				3.72
Scottsboro		do	.06	.42	.11		.06		.19					.30	.75	.42			.31	.05		.05						.45	.50	.05				3.72
Tuscumbia		do	.80	.40	.33	.43		1.78	.06	.25	.04				.11		.43		.44	.35	2.05	.40			.08			.07		.11				8.13
Tennessee.																																	
Ashwood		Tennessee	.40	1.40	.10		.50	T.	.35					T.	T.		.15			1.90							.35	1.35	.15	.10	.10			6.85
Benton		do	.13	.46	.06				.05		.04			.18	T.	.18			.08	.42		T.	.04				T.				.35	.28	.18	2.45
Bird's Bridge		do					.24		.03	.13	.11				.10		.05	.73		.03	.40				.08			.57	.34		.09		.64	3.54
Bluff City		do			T.				.32	T.					.15			.44		T.						.38		.42	T.			.42	2.13
Byrdstown		Cumberland		1.72									.12			.65									.40	.13	.50						3.52
Carthage		do	.28	.45	1.15	T.				.26				.05	.15	.21			.38	T.	.18						.11	.30	.03				.03	3.58
Cedar Hill		do	1.00	1.00		T.	.08	.24	.48	T.				.04	.02			.03	.04		.05		T.			.50	.30	.05		T.			3.83
Celina		do	.26	.50	.68					.08				.29		.17	.05		.83							.05	.30	T.		.40			3.61
Center Point		Tennessee				.10		.31	.30						T.	.30					1.40						.75	1.50	.55				
Charleston		do	.28	.26	T.	.04				.02	.16				.15	.11					.06		.50				.12		.03		.50	.22	2.45
Chattanooga		do	1.21	.03	.05				.18		.54				.31	.06	.01					.06	.10			.22	.01	.08			.16		3.02
Clarksville		Cumberland	1.80	.27			.26		.72	.63				.02	.40	.01	.24		.30			.01				1.26	.30	.02	.54				6.78
Clinton		Tennessee	.38	.18	1.26										.21	.24				.14		T.						.24					2.65
Dandridge		do							.60							.30														.20			1.10
Decatur		do	.61	.02	.04				.12		.70					.31	.01		.01	.33						T.	T.	.60			.26	.14	3.15
Dickson		Cumberland	1.09	.27				.33	.43					.09			.73			.38		.06				.44	.80	.04	T.				4.66
Dover		do	.72	1.35		T.	.14	T.	.54	.42				T.	T.	T.				T.		.58		T.		.72	.18	.46	.26				5.37
Dunlap		Tennessee	1.05								.05				.05	.11	.33	.13	.06	.01		.30					.68				.02		2.79
Elizabethton		do	T.	.28	T.	.14			.65								.44			.10	T.				.14	.25		.08		.10		.47	2.65
Erasmus		Cumberland	.23	.16	.93	T.								T.	.71	.01	T.	.03	.56		.01				.16	T.	.64	.05	T.	T.	.09	.05	3.63
Florence		do	.33	1.60				T.	1.25					T.	.02	T.	.13			.24		T.			T.	T.	1.23	T.	T.				4.80
Franklin		do	1.13	.35				.15	.91						.07	.10	.03		.06	.41		.06				.40	.64		.12				4.43
Hall's Hill		do	.20	1.20	1.40					1.26						.48	.40			.27		.23					.05	1.10	.32	.10		T.	7.01
Harriman		Tennessee	T.	.50	.19			.49	.04							.24	T.	T.	T.								.90					T.	2.36
Hohenwald		do	.28	.40	.05		.31	.41	.65		.20				.40		.65			.99		.29			.09	.90	1.22		.30				7.14
Iron City		do	1.15	.13			.17	.15	.18		.01				.09	.66	.08		.22	1.11	.12	.65		.03		.06	.23		T.				5.04
Jefferson City		do	.04	.74	.45					1.14						.28	.24														.04	.05	2.98
Johnson City		do					.07			.31	.02							.35		.15	.10					.03	T.	.09		T.	.01	.47	1.60
Johnsonville		do	1.34	.30			1.05	.63	.06		.21			T.	.04		.16			.48		.20		.04		.44	.70	.29	.01				5.95
Kingston		do	.10	.36	1.03	.05				.06						.25	.05			.06	.30	T.	.03				.09	T.			T.	.05	2.43
Knoxville		do	.02	1.37	.01	T.				.34				.64	.34	.02	.01			.19					T.		T.		T.	.02	.01	.02	2.99
Lebanon		Cumberland	.24	.40					1.12					.38	T.	.36	.06		.08	.75		T.			T.	.08	.85	.06	.51	T.	T.	T.	4.89
Lewisburg		Tennessee	.64	.64			.02	.06	.78					T.	.46	.25	.04	.11	T.	1.36	T.	.22			T.	.01	1.01	T.	.03	T.	T.	T.	5.63
Livingston		Cumberland	.35	1.15					.45					.35	.25	.50	.05		.15	.25								.20			.05		3.75
Loudon		Tennessee	.22	.88	.73	1.10									.26	.22	1.15	T.		T.	.30						T.	T.			T.	.10	4.96
Lynnville		do	.35	.34		T.	T.	T.	.60		T.			T.	.16	T.	.39	.24	.28	.14		.17				.04	1.52		.24				4.47
McGhee		do	.10	.54	.36	.11	.03										.12	.98			.70										T.	.10	3.04
McMinnville		Cumberland	.03	.75				.30	.80						T.	.40	.60		1.40	.28		.07			T.	T.	1.57	.02	.03	T.	T.	T.	6.25
Maryville		Tennessee	.06	.32	1.65					.46				T.	.50	.19				.10							T.				.10	.46	3.84
Mountain City		do	.21		.61	.12		.14						1.35		.09	.20			.33						.12	.29		.21	.24	.06	.63	4.60
Nashville		Cumberland	1.05	1.26			.50	T.	.82	T.					T.	.10	.07		.28	.03		.08				.31	.53	.03	T.	.11	T.		5.17
Newport		Tennessee	.21	.20	.22	.05	T.				.14					.07		1.16									.06	.40		.12	.02	.66	3.31
New River		Cumberland		.35	.61	.72	.45								1.69						.20						.12				.48		4.62
Palmetto		Tennessee	.80	1.10	T.		.05	T.	1.25		.06				.17	.35	.05			.50		.15				.03	.02	1.46	T.	.05		T.		6.04
Pinewood		do	.63	.32			.13		.68		.16			T.	.16	T.	.33			.50	T.	T.					2.00		.71				5.62
Pope		do	.30	.20				.50											2.00	1.90						T.	T.						
Rogersville		do	.56	.09	.22	.22			.06		.02				.91	.03	T.	.52		.27							T.	.11	.32		.18	.07	.17	3.75
Rugby		Cumberland	.43	.21	.70	1.00		T.						1.25	.07	.35	.03			.23						.13		.08	.09	T.	.08	.20	.09	4.94
Savannah		Tennessee																															
Sevierville		do	.08	.34	.23						.58					.06	.11										.11				.17	.38	2.06
Sewanee		do							.31							.93		T.									1.11				*	.21	3.56
Sparta		Cumberland	1.10		.10					.40					T.	1.78	T.			1.05		.10			T.	T.	1.28	T.		T.	T.	T.	5.81
Springdale		Tennessee		.67	1.07	T.						T.		.09	.32	.76	T.													.08	.72		3.71
Springville		do	.40	.26	.01	.50	.02	.46	.19	.22	.70			.06	.03	.36	.09					.01		.01			.35	.22	.94	.08				4.91
Tazewell		do		.20	1.00	.43	.10									.13	.27	.43									T.	.07			.28		2.91
Tullahoma		do	.19	.07					.44		.04				T.	1.33	.22	T.	T.	.01		.05				T.	T.	.70	.22	.10			T.	3.37
Walling		Cumberland	.35	1.06	2.00	.04				.18						.05	.15			1.04	.50	.32					.60	.15					6.44
Waynesboro		Tennessee	.71	.28	T.	.88	.08	1.12	.89		.23			T.	.08	.06	T.		T.	.39	1.40	.85		.45		.50	.60	.18	T.					8.70
Wildersville		do	.60			.75	.31	.50			.35				T.	T.	.42			.92	T.	1.06		.10		.50	1.20	.50						7.22
Worsham		Cumberland	1.10	.23					.60	.05				.23						.15		.02				.30	.24		.11				3.03
Yukon		Tennessee	.90	.10	T.		.60	T.	1.20					.20	.60	.14		.22		1.32		.22				.10	1.00						6.60
Kentucky.																																	
Alpha		Cumberland	1.60	.28	.90										T.	.51	T.		T.			T.			T.	T.	.40	T.			T.	T.	T.	3.69
Anchorage		Ohio	.47	.03	.07									.31					T.							.69	.02		.92				2.51
Bardstown		Salt	.28	.27	.56										.60		.08	1.07		.07						.32	.70	.37	.05	T.			4.37
Beattyville		Kentucky		T.	.32				.12		.18				.84	T.	.24	T.							T.		.18		T.	T.	1.66	.94	4.48
Beaver Dam		Green	.25	T.	.15		T.			.84						T.	T.	T.		.10						T.	.72	.65	1.86	1.29			5.86
Berea		Kentucky	T.	.10	T.	.30		T.		T.					.08	.06	.20	.82								.20	T.	.01	.21	.48	2.25	.08	4.79
Bowling Green		Green	.43	.75	.50	T.				.40					.30		.03			.36		T.					1.00	.18	1.00	.40			5.35
Burnside		Cumberland	.02	.14	.54	.06	.35		T.						.17	.04	.24										.52	.14		.04	.05	.08	2.39
Calhoun		Green	.17	.52			T.		.37		T.				T.	T.	T.		T.	.02		T.			T.	.19	.02	.47	1.00				2.76
Catlettsburg		Big Sandy			.06	.20				.04					T.	2.44		.16		T.					T.	.16	.28	.04			1.62	.72	5.72
Earlington		Green		.17	.01					.46						T.	T.				1.01	.08				.29	.06	.91	.69	.46			4.14
Edmonton		do	.35	.32	.02										.43	.05	.10			.05					.09	.41		.13	.08	.08	T.		2.11
Eubank		Cumberland	.38	.35	.28										.33		.25									.13	.26			.08	2.20	.17	4.43
Falmouth		Licking	.03	.20	.59												.09	.01		.06						.67	.41			.12			2.18
Farmers		do	T.			1.12								.13		.32	.53								T.	.24	.02			.68	1.22		4.26
Frankfort		Kentucky	.21	T.	.80	T.	.18		T.						.88	.22	.40	.20		.62						.01	1.50	.40	T.		T.	T.		5.42
Franklin		Green	1.52	.63				T.	.65	.52				T.					T.	1.30		.29		T.			.62	.10	1.08		T.	T.		6.71
Greensburg		do		.20	1.58	.20									.58	.02	.75	.05									.55	.01	.16	.32	.04	.02	4.48
High Bridge		Kentucky	.10	.05	.14				.05								.05	.87		.47							1.11			.08			2.92
Hopkinsville		Cumberland	.55	.20	.30		.15			.95						.05	.05			T.		.15				.05	.95	.05	.20	.10			3.75
Irvington		Ohio	.70	.19					T.						T.					.18					T.	.52	T.	.14	1.56				3.29
Leitchfield		Green	1.42	1.38					.16					.05					T.			.04			T.	1.01		.72	1.66				6.44
Lexington		Kentucky	.22	.04	.02	.01				.05				.27	T.	T.	.23		.80					T.		T.	.66	T.	T.	.09	.45	T.	T.	2.84
Loretto		Salt	.11	.28	.64									.21	T.		.15		.13	.04						.40	.55	T.	.08				2.59
Louisville		Ohio	.46	.06	T.									.02	T.		.01		.32						T.	.46	.01	T.	1.37				2.71
Marion		do	.32	T.		.30	.40	T.	1.24		.27				T.	.13	T.	T.	.20	T.	T.					.27	T.	1.52	.10				4.75
Maysville		do	.06	.10	.07		.08								T.	T.	T.	.18		.12						.15	1.08	.02			.44		2.30
Middlesboro		Cumberland	.15	.05	.95	.35			.04						.15	.05	.10			.11						.14	.03	.02		.65	.03		2.32
Mount Sterling		Licking	.22	T.	.05		.32	T.							.15		.62	.16		.08						.08	.47	.11	.08	.60	.63	.18	3.75
Owensboro		Ohio	.50	.05				T.		.63						T.	.02			.15		T.				.22	.02	.23	2.50	.11			4.41
Paducah		do	.64	.10			.36			.48	1.92					.30	.08			T.		T.		.22		.43		.42	1.00	.14			6.09
Paintsville		Big Sandy																															

TABLE 2.—*Daily precipitation for August, 1911, District No. 3*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Kentucky—cont'd.																																	
Pikeville‖	Big Sandy	....	.24	.52	.15	....	....	....	.12	T.	....	....	T.	.98	....	....	.30	....	....	....	....	....	....	....	....	.10	.10	....	....	.30	.46	3.27
Richmond‖	Kentucky	.02	.03	.12	....	.05	....	.25	....	....	....	....	....	.01	T.	.15	.22	....	.12	....	....	....	....	....	.25	T.	.60	T.	.20	.38	.97	.15	3.52
St. John‖	Salt	.78	.20	.55	....	....	....	....	....	....	....	....	....	.65	....	T.	....	....	.10	....	....	....	....	....	....	1.32	.55	....	.47	.60	....	....	5.22
Scott	Licking	.40	.05	1.43	.05	.41	T.	....	....	....	....	....	....	T.	T.	.46	....	.01	....	....	....	....	....	T.	.42	.84	....	....	.13	....	....	T.	4.20
Shelby City	Kentucky	....	.22	....	....	....	T.	....	....	....	....	....	.20	.05	T.	....	....	....	....	....	....	....	....	....	.10	.26	.06	....	....	.57	.32	.06	1.84
Shelbyville‖	Salt	.02	.32	1.00	....	....	T.	....	....	....	....	....	....	2.20	....	....	....	....	.90	....	....	....	....	....	....	.73	.30	T.	....	.37	....	....	5.84
Taylorsville	....do	.68	.10	.24	T.	....	....	T.	....	....	....	....	.90	.01	....	T.	.44	1.10	....	....	....	....	....	....	....	.90	....	....	.76	....	....	....	5.13
Williamsburg‖	Cumberland	.04	.10	1.32	.38	T.	....	....	....	....	....	....	....	....	.05	1.10	.03	....	....	....	....	....	....	....	....	....	.08	....	.10	....	.45	.30	3.95
Williamstown‖	Licking	.04	.41	1.11	....	....	....	.03	....	....	....	....	....	....	.09	.05	.01	....	.77	....	....	....	....	....	T.	.64	.77	.07	....	.15	T.	....	....	4.14
Indiana.																																	
Anderson	West Fork, White.	.16	....	....	....	.05	....	....	....	....	....	....	....	....	.06	.14	....	.10	....	....	....	....	....	.14	1.30	....	....	....	.51	....	....	....	2.46
Alliea‖	Wabash	.50	.36	....	....	....	....	....	....	....	....	.54	....	....	....	....	....	....	....	....	....	....	....	.10	.90	.28	....	....	.16	.02	....	....	2.86
Bloomington‖	West Fork, White.	.10	.17	.01	....	....	....	.36	....	....	....	....	.14	....	....	.33	....	....	.30	....	....	....	....	....	.04	1.67	.10	....	.16	.65	....	....	4.03
Bluffton‖	Wabash	....	.53	....	....	1.43	.30	....	....	....	....	....	.89	.51	....	.10	.04	....	....	....	....	....	....	....	.94	1.28	....	....	.40	.34	....	....	6.76
Butlerville	East Fork, White.	.31	.96	.08	....	....	....	....	....	....	....	....	....	.25	....	.35	....	....	....	....	....	....	....	.19	.08	.60	....	....	.51	....	....	....	3.33
Cambridge City‖	Whitewater	T.	.29	.19	....	.35	.04	....	....	....	....	....	....	....	.78	.07	.02	....	.20	....	....	....	....	T.	.14	.50	.14	....	.05	.57	....	....	3.34
Columbus‖	East Fork, White.	.03	.09	.18	....	....	.57	1.20	.02	....	....	....	....	....	.17	T.	....	....	.45	....	....	....	....	....	T.	.72	.47	....	.06	.07	....	....	4.03
Connersville	Whitewater	....	....	....	.05	....	....	....	....	....	....	....	....	.35	....	....	....	.40	....	....	....	....	....	....	.49	1.03	....	....	....	....	....	....	2.32
Crawfordsville	Wabash	.38	....	....	....	T.	....	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	1.70	....	....	....	.50	....	....	....	3.08
Delphi‖	....do	.12	1.05	....	....	.03	....	....	....	....	....	.03	.26	.02	....	T.	....	....	T.	....	....	....	....	T.	1.11	.42	....	....	.07	.08	....	....	3.19
Eminence	West Fork, White.	.55	.20	....	....	.34	.20	....	....	....	....	....	....	....	T.	....	....	.44	....	....	....	....	....	....	.41	....	....	....	T.	....	....	....	2.14
Evansville	Ohio	.74	....	....	....	.11	T.	.29	....	....	....	....	....	....	T.	T.	....	1.39	....	....	....	....	....	T.	.75	.59	....	.17	.88	....	....	....	4.92
Farmersburg	Wabash	.07	....	....	....	T.	....	.05	T.	....	....	....	....	.05	....	....	....	.04	....	....	....	....	....	....	.33	.18	....	....	....	....	....	....	0.72
Farmland‖	West Fork, White.	....	.53	.04	....	.30	....	T.	....	....	....	....	.49	T.	.18	.09	....	....	1.53	....	....	....	....	....	.32	.72	....	....	T.	.33	....	....	4.53
Greenfield	East Fork, White.	.05	....	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	T.	....	....	....	....	....	T.	.50	.11	....	....	.12	....	....	....	0.78
Greensburg	....do	.01	....	....	....	.30	....	....	....	....	....	....	....	....	....	.35	....	....	....	....	....	....	....	.02	....	1.15	....	....	.15	....	....	....	1.98
Huntingburg	Wabash	.47	....	....	....	....	.30	.07	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.98	....	....	1.04	....	....	....	2.86
Huntington	....do	.35	....	....	T.	....	....	....	....	....	....	....	1.09	.66	....	.07	....	T.	....	....	....	....	.04	....	1.50	.05	....	....	.67	....	....	....	4.43
Indianapolis	West Fork, White.	.29	T.	.01	....	T.	T.	....	....	....	....	....	....	....	T.	....	....	.17	....	....	....	....	....	.06	.57	T.	.03	....	.03	....	....	....	1.16
Jeffersonville	Ohio	.44	.02	.05	....	....	....	....	....	....	....	....	T.	T.	....	.01	....	.08	.05	....	....	....	....	....	T.	.49	.01	....	1.54	....	....	....	2.69
Judyville	Wabash	.49	.23	....	.01	....	....	....	....	....	....	T.	1.14	....	.01	....	....	....	T.	....	....	....	T.	T.	1.72	T.	....	....	.81	....	....	....	4.41
Kokomo	....do	.39	....	....	....	....	....	....	....	....	....	....	T.	T.	.32	.16	....	....	....	....	....	....	T.	T.	2.41	T.	....	....	.36	....	....	....	3.64
Lafayette‖	....do	.20	.40	....	....	.25	....	....	....	....	....	T.	.01	.29	....	.01	....	....	....	....	....	....	....	T.	.95	.41	....	....	.13	.06	....	....	2.71
Laurel	Whitewater	.02	.08	.15	....	.42	....	....	....	....	....	....	....	....	....	.07	.01	....	....	....	....	....	....	....	.04	.90	.21	....	.03	.09	....	....	2.02
Logansport‖	Wabash	.15	.14	....	....	.23	....	....	....	....	....	....	.26	1.92	....	.50	....	....	....	....	....	....	....	....	.90	.28	....	....	....	.07	....	....	4.45
Madison	Ohio	.26	.16	.75	....	.10	....	....	....	....	....	....	.03	.01	....	.21	....	....	....	....	....	....	....	....	....	.90	....	....	.54	....	....	....	2.96
Marengo	....do	.36	T.	....	....	....	T.	....	....	....	....	....	.65	.05	....	.10	....	T.	....	....	....	....	T.	.03	....	.94	....	....	.68	....	....	....	2.81
Marion‖	Wabash	....	.21	....	....	....	....	....	....	....	....	....	.86	.48	....	.62	.26	....	....	....	....	....	....	....	1.11	1.29	....	....	....	.25	....	....	5.08
Mauzy	East Fork, White.	.49	.02	.20	....	....	....	....	....	....	....	....	....	....	T.	.11	....	.03	....	....	....	....	....	T.	.30	.85	....	....	.15	....	....	....	2.15
Monticello‖	Wabash	.17	.49	....	....	.11	....	....	....	....	....	.04	.06	.33	....	T.	....	....	....	....	....	....	....	T.	1.04	.25	....	T.	....	....	....	....	2.49
Moores Hill	Ohio	.06	.44	.56	.52	....	T.	....	....	....	....	....	....	.12	....	.26	....	T.	....	....	....	....	....	....	T.	.75	....	....	....	....	....	....	2.71
Mount Vernon‖	....do	.80	.22	....	....	....	....	....	1.03	....	....	....	....	....	....	....	....	....	.72	....	....	....	....	....	....	2.15	.31	....	1.10	....	....	....	6.33
Paoli	East Fork, White.	.37	.02	....	....	....	T.	....	....	....	....	....	2.25	....	....	.34	....	....	....	....	....	....	....	....	....	.60	....	....	.39	....	....	....	3.97
Princeton	Wabash	.09	....	....	....	....	....	.08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.06	....	.08	1.50	1.26	....	....	....	....	3.07
Richmond	Whitewater	.07	.10	.15	.18	2.38	....	....	....	....	....	....	....	.10	.27	.12	....	.12	....	....	....	....	....	.04	.36	.47	....	....	.08	....	....	....	4.44
Rochester	Wabash	.24	.08	....	T.	....	....	....	....	....	....	....	.56	.71	....	.25	....	.02	....	....	....	....	.06	....	1.12	....	....	....	....	....	....	....	3.04
Rockville	....do	.42	....	....	....	.13	....	....	....	....	....	....	....	....	....	....	....	.13	....	....	....	....	....	T.	1.88	....	....	....	T.	....	....	....	2.56
Rome	Ohio	.24	T.	....	....	....	....	.02	....	....	....	....	....	....	....	....	....	....	.32	....	.01	....	....	....	....	.40	T.	.03	3.33	T.	....	....	4.35
Salamonia	Wabash	.34	....	.17	.67	....	....	....	....	....	....	....	.80	2.02	.19	T.	....	....	....	....	....	....	....	....	1.52	....	....	....	.79	....	....	....	6.50
Salem	Ohio	.16	T.	.05	....	T.	T.	....	....	....	....	....	.35	.45	....	.02	....	T.	....	....	....	....	....	T.	T.	.56	....	....	.64	....	....	....	2.23
Scottsburg	East Fork, White.	.28	....	.04	....	.31	....	....	....	....	....	....	T.	.36	....	.78	....	....	....	....	....	....	....	....	T.	.58	....	....	.70	....	....	....	3.05
Seymour	....do	.26	.07	....	....	....	T.	....	....	....	....	T.	.22	T.	.17	.13	....	....	....	....	....	....	....	T.	.02	.56	....	T.	.20	....	....	....	1.63
Shelbyville	....do	.07	....	.06	....	....	....	....	....	....	....	....	....	....	T.	.15	....	....	....	....	....	....	T.	....	.32	.98	....	....	.27	....	....	....	1.85
Shoals‖	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Terre Haute	Wabash	.01	....	....	....	....	.04	....	T.	....	....	....	....	....	....	....	....	.02	....	....	....	....	....	....	1.24	....	....	....	....	....	....	....	1.31
Veedersburg	....do	.24	.09	....	....	T.	....	.01	....	T.	....	....	T.	....	T.	....	....	....	T.	....	....	....	T.	.50	1.35	.01	....	....	.57	....	....	....	2.77
Vevay	Ohio	.50	.15	....	....	.40	....	....	....	....	....	....	....	.20	....	1.60	....	1.55	....	....	....	....	....	....	....	1.65	....	....	1.45	....	....	....	7.50
Vincennes ‖	Wabash	.50	.20	....	....	....	....	....	.30	....	....	....	....	....	T.	.10	....	....	T.	....	T.	....	....	....	T.	.70	....	....	T.	....	....	....	1.80
Washington	West Fork, White.	.48	....	....	....	....	....	.06	....	....	....	....	....	....	....	.39	....	T.	....	....	....	....	....	....	....	.60	....	....	.20	....	....	....	1.73
Whitestown ‖	....do	.36	.08	....	....	T.	....	T.	....	....	....	....	....	....	....	.04	....	....	.49	....	....	....	....	T.	1.49	....	....	....	.01	.52	....	....	2.99
Winona Lake	Wabash	.62	....	....	....	....	....	....	....	....	....	T.	.38	.12	....	T.	T.	....	....	....	....	....	T.	....	1.26	....	....	....	....	....	....	....	2.38
Worthington	West Fork, White.	.30	....	....	....	T.	....	....	....	....	....	.07	T.	....	.02	....	....	T.	....	....	....	....	....	....	.22	1.10	....	....	.05	....	....	....	1.76
Illinois.																																	
Albion	Wabash	.27	....	....	....	....	.24	.42	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20	.11	.58	....	.10	....	....	....	....	1.92
Carmi	....do	.47	....	....	.04	....	.26	.50	....	....	....	....	....	T.	....	....	....	.24	T.	....	....	....	.07	1.01	....	.50	....	.14	....	....	....	....	3.23
Charleston	....do	.61	....	.01	....	.37	....	.21	....	....	....	....	....	....	....	....	....	.10	....	....	....	....	.28	.56	1.05	....	....	....	....	....	....	....	3.19
Danville	....do	.62	.03	....	T.	....	....	.02	....	T.	....	....	T.	....	....	....	....	T.	....	....	....	....	....	.83	1.91	....	....	....	.32	....	....	....	3.73
Equality	Ohio	1.25	.01	T.	.02	T.	....	1.17	....	....	....	....	.15	....	....	T.	....	T.	....	....	....	....	.15	.48	.12	.70	....	2.81	.11	....	....	....	6.97
Fairfield	Wabash	.23	....	....	.36	....	....	.31	....	....	....	....	....	.19	.65	....	....	....	....	....	....	....	....	....	.33	.41	....	.05	....	....	....	....	2.53
Flora	....do	.90	....	....	.38	....	T.	.73	....	....	....	....	....	.76	T.	T.	....	.06	....	T.	....	....	.21	....	.55	.33	....	....	T.	....	....	....	3.92
Golconda	Ohio	.95	....	....	1.94	.15	.04	.27	....	....	....	....	....	.12	.03	....	....	....	....	T.	....	....	.22	....	.47	.52	.02	.26	.41	....	....	....	5.40
Hoopeston	Wabash	.39	....	....	.02	....	....	T.	....	....	....	.17	.33	....	T.	....	....	....	....	....	....	....	.01	.06	1.58	.02	....	....	.34	....	....	....	2.92
McLeansboro	Ohio	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Metropolis	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Montrose	Wabash	.35	....	....	....	3.04	....	.38	....	....	.22	.04	....	....	.12	....	....	.05	....	....	.03	....	.06	....	.70	.01	....	....	....	....	....	....	5.00
Mount Carmel ‖	....do	.72	.08	....	....	....	....	.02	.50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.08	.70	.02	.08	.08	....	....	....	2.28
New Burnside ‖	Ohio	.54	.53	....	.27	.24	T.	T.	....	.56	....	....	....	....	.05	....	....	....	.03	T.	....	....	.25	....	....	.97	....	....	.65	....	....	....	4.09
Olney	Wabash	.16	....	.03	....	.03	....	.59	....	....	....	....	....	T.	.19	....	....	.43	....	....	....	....	....	....	.22	....	.75	....	....	....	....	....	2.40
Palestine	....do	.40	....	....	....	....	....	.16	T.	....	....	....	....	....	T.	T.	....	.07	....	....	....	....	....	.03	.36	.75	....	....	.01	....	....	....	1.78
Paris ‖	....do	.51	....	....	....	....	.72	T.	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T.	.65	.30	....	....	T.	....	....	....	2.28
Philo	....do	....	....	....	....	....	....	.05	.04	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.34	2.05	....	....	....	.15	....	....	....	2.63
Rantoul ‖	....do	.90	....	....	....	....	....	T.	.06	....	.03	.18	....	.14	....	....	....	....	T.	....	....	....	....	.07	1.44	.25	....	....	2.10	.02	....	....	5.19
Robinson	....do	.12	....	....	....	.06	....	.18	....	....	....	....	.60	....	.45	....	....	.40	....	....	....	....	....	.24	.61	....	....	....	....	....	....	....	2.66
Sumner	....do	.22	....	....	....	....	....	.41	....	....	....	....	.17	....	....	....	....	T.	....	....	....	....	....	T.	.29	.71	....	....	....	....	....	....	1.80
Tuscola	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Urbana	....do	.46	....	....	....	....	....	.08	....	T.	....	....	T.	....	....	....	....	T.	....	....	....	....	....	.42	1.62	T.	....	....	.77	....	....	....	3.35

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.

‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 3, Ohio Valley.*

Date.	Pennsylvania.				West Virginia.																Ohio.							
	Greenville.		Pittsburgh.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington.§§		Morgantown.		Parkersburg.		Wheeling.§§		Canton.§§		Cincinnati.		Columbus.		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	88	64	91	72	92	67	85	61	90	58	94	63	91	67	92	66	90	69	95	66	90	62	82	70	85	69	81	63
2....	91	62	88	66	90	70	85	60	84	62	93	66	87	71	88	68	86	69	90	65	86	68	80	67	81	69	77	68
3....	86	64	88	69	87	70	82	61	87	61	89	68	85	70	87	67	86	69	97	69	84	67	86	66	80	67	82	66
4....	88	63	90	71	89	68	85	60	85	63	96	65	89	68	87	68	92	68	95	68	90	61	86	68	89	65	86	67
5....	86	64	87	69	92	67	87	60	86	60	93	65	90	66	86	66	92	68	92	65	91	65	89	68	91	68	89	67
6....	89	62	89	70	94	67	87	60	88	60	96	65	93	62	87	66	93	68	97	67	92	65	91	69	93	69	92	68
7....	93	60	92	70	93	69	85	63	92	61	97	65	92	68	91	67	94	69	99	66	94	65	92	71	91	71	88	71
8....	92	64	91	73	95	69	90	63	93	66	97	67	93	70	93	.....	94	72	96	68	93	69	91	72	91	72	91	70
9....	87	56	86	67	95	68	90	61	88	61	96	64	92	67	92	.....	91	70	93	64	89	61	91	69	91	64	92	63
0....	95	57	97	66	97	63	92	58	95	54	101	56	96	62	93	.....	98	63	97	60	97	60	96	69	98	67	98	68
11....	84	62	91	70	100	68	94	65	97	59	103	61	97	66	95	73	96	72	95	62	87	66	94	72	91	68	93	69
12....	77	57	82	64	100	62	93	62	88	63	96	67	93	71	90	63	91	70	94	65	80	60	90	70	86	63	90	66
13....	87	58	85	68	91	69	89	64	86	65	93	68	88	70	84	67	90	72	85	67	86	64	86	72	84	69	87	70
14....	84	63	86	65	89	71	83	62	85	63	94	65	85	70	83	70	90	71	91	62	87	65	88	73	88	68	88	69
15....	80	63	78	69	89	71	80	65	76	64	82	69	83	70	79	68	79	71	80	69	84	66	86	72	84	71	85	71
16....	87	58	87	66	90	70	85	65	86	60	84	64	86	68	86	63	90	63	94	60	90	62	91	67	89	66	90	64
17....	85	68	87	68	94	65	90	56	90	59	97	60	92	63	88	69	94	69	96	63	87	69	94	68	93	66	93	69
18....	78	51	80	64	94	69	89	63	81	55	91	66	87	63	84	64	86	68	89	66	81	61	88	69	83	65	84	64
19....	74	45	73	57	89	60	83	55	75	49	87	51	82	60	74	53	77	58	82	58	75	51	79	60	77	58	77	57
20....	76	43	75	51	83	57	80	51	77	48	83	49	78	57	74	49	76	56	85	48	76	45	78	60	77	55	78	54
21....	84	51	82	56	86	53	79	48	82	47	90	46	83	53	83	49	86	52	87	49	83	45	86	59	84	55	84	56
22....	88	51	86	66	88	60	82	54	86	50	94	54	88	58	87	52	90	65	92	52	89	55	88	61	87	63	86	60
23....	78	59	78	65	90	63	86	55	86	55	95	58	85	62	82	62	87	65	80	57	80	61	88	68	80	65	82	67
24....	63	57	69	62	90	67	86	57	84	60	89	62	83	69	83	63	82	66	74	60	67	57	87	67	72	61	75	62
25....	71	57	70	64	85	69	83	62	79	65	83	62	82	69	77	64	74	68	74	60	70	58	72	66	68	64	70	61
26....	81	57	75	64	84	70	79	63	81	66	83	68	87	69	83	65	82	67	82	64	80	60	78	65	75	61	75	60
27....	85	60	85	70	91	69	86	65	85	66	93	70	90	72	91	68	90	70	88	65	86	61	87	70	86	68	85	68
28....	73	61	85	65	93	70	84	60	88	62	94	69	85	62	91	70	90	70	90	68	73	68	77	66	76	63	75	61
29....	69	55	67	58	92	61	82	59	71	60	88	58	66	58	72	54	70	58	64	50	68	56	72	57	69	56	71	53
30....	67	48	62	57	67	58	73	66	64	59	65	57	74	58	62	55	63	58	64	57	67	50	74	54	69	51	72	48
31....	76	52	72	56	72	63	71	58	67	57	68	60	74	61	71	56	71	59	76	58	75	53	78	64	77	58	79	58
Mns..	82.0	57.5	82.4	65.1	89.7	65.9	84.7	60.1	83.9	59.3	90.5	62.2	86.3	65.2	84.4	63.0	86.1	66.2	87.5	61.9	83.1	60.5	85.3	66.7	83.4	64.4	83.7	64.0

Date.	Ohio.				Virginia.				Asheville, N. C.		Decatur, Ala.		Tennessee.														Beattyville, Ky.§§	
	Marion.		Waverly.§§		Big Stone Gap.		Wytheville.						Chattanooga.		Johnson City.§§		Knoxville.		Nashville.		Palmetto.		Sparta.		Waynesboro.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	89	61	90	63	82	64	83	62	77	64	84	69	82	68	89	66	85	69	80	68	77	67	80	68	83	67	92	60
2....	84	66	85	66	80	66	83	64	77	62	80	69	78	69	89	67	83	67	73	67	77	68	75	66	81	69	82	62
3....	79	67	88	68	80	67	80	63	75	66	87	65	82	70	89	62	80	68	85	64	85	61	85	62	86	64	92	66
4....	91	59	90	63	81	65	85	62	81	63	90	68	88	68	94	64	86	68	88	70	89	62	89	67	90	64	93	61
5....	93	62	90	62	85	62	83	60	83	60	90	68	91	68	87	63	89	67	88	68	88	70	89	66	89	67	97	63
6....	96	65	92	66	86	64	79	61	82	61	86	69	89	68	95	65	90	70	83	68	85	66	86	66	80	68	99	62
7....	93	66	93	66	85	63	85	64	85	62	90	67	89	68	95	61	90	69	88	68	88	68	89	67	90	65	95	64
8....	94	70	93	67	87	65	87	64	86	64	92	67	92	65	97	64	91	70	93	67	93	65	92	63	93	63	100	61
9....	97	59	92	61	87	65	90	64	87	63	92	68	91	67	97	63	92	67	93	68	91	68	92	65	92	65	99	61
10....	101	67	98	58	92	61	88	59	86	62	94	72	92	73	101	63	94	69	95	72	94	70	94	66	93	68	100	54
11....	100	73	96	62	90	63	92	61	88	64	91	71	88	71	101	64	92	70	92	73	90	79	92	67	88	68	104	56
12....	85	60	92	65	90	70	89	64	85	64	83	72	85	71	95	67	87	68	89	70	87	68	90	67	83	66	99	64
13....	88	67	89	69	86	66	84	63	83	63	87	70	87	68	92	63	91	68	87	71	87	70	91	67	80	68	95	63
14....	92	66	87	68	81	67	84	67	85	64	89	70	85	68	95	63	87	70	84	70	84	69	87	68	84	68	95	66
15....	87	70	83	68	78	67	78	66	85	65	88	70	87	70	87	69	84	71	84	70	84	68	86	70	80	70	88	66
16....	92	62	90	62	85	67	85	64	83	64	97	72	89	69	94	65	88	69	90	71	90	68	87	70	92	69	97	64
17....	92	66	93	63	86	60	89	69	87	59	91	83	89	72	96	62	90	66	90	73	88	70	88	68	95	67	98	59
18....	85	61	88	64	83	65	81	63	83	64	81	72	82	72	85	62	83	73	86	72	82	70	85	69	79	72	96	65
19....	82	52	82	52	80	61	79	58	81	62	89	70	89	72	89	63	86	70	84	70	88	71	84	71	89	67	89	56
20....	83	45	79	49	78	52	75	50	78	55	85	67	84	68	90	55	83	63	83	65	85	66	81	63	83	66	87	50
21....	89	46	86	46	81	51	77	54	76	57	86	61	85	61	90	55	86	62	84	60	85	56	85	55	85	57	93	45
22....	90	57	90	51	82	54	81	55	78	57	88	62	83	65	88	58	82	62	84	64	85	64	86	59	85	67	96	53
23....	82	62	91	58	83	56	84	55	82	55	90	65	86	64	94	59	88	63	86	64	89	63	86	60	87	61	94	55
24....	66	58	89	66	83	59	83	56	82	59	87	65	86	69	90	59	86	65	87	66	85	64	84	62	87	62	94	58
25....	71	60	71	67	83	65	83	60	82	65	89	69	86	71	88	65	87	72	80	71	89	65	83	61	82	62	87	60
26....	80	55	80	65	80	67	80	64	86	62	90	70	89	70	88	68	84	71	77	70	84	68	83	69	82	68	87	64
27....	87	62	88	69	86	65	85	65	84	63	99	72	91	69	96	65	92	68	86	70	90	67	85	65	90	65	91	65
28....	81	66	85	70	86	63	83	67	80	65	90	71	90	71	95	65	92	70	86	70	89	69	89	67	86	67	98	64
29....	73	54	65	57	80	66	80	67	73	65	77	72	85	70	88	69	85	67	71	60	77	63	78	65	74	66	67	62
30....	75	46	72	59	73	63	68	58	71	64	75	63	73	65	88	63	79	67	75	63	70	61	72	61	71	62	65	55
31....	79	50	77	59	77	65	72	57	77	63	80	64	75	67	76	63	78	68	82	66	78	65	73	64	85	62	80	55
Mns..	86.3	60.6	86.6	62.2	83.1	63.0	82.4	61.2	81.5	62.1	87.6	68.8	86.1	68.6	91.5	63.2	86.8	68.0	84.9	68.0	85.6	66.7	85.4	65.3	85.3	65.8	91.9	60.0

TABLE 3.—*Maximum and minimum temperatures for August, 1911. District No. 3*—Continued.

Date.	Kentucky.														Indiana.												Philo, Ill.	
	Bowling Green.§§		Earlington. §§		Greensburg.§§		Lexington.		Louisville.		Maysville. §§		Williamsburg.§§		Butlerville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	85	66	87	70	83	66	82	68	83	70	88	64	86	65	86	63	84	69	81	69	81	67	83	69	82	70	85	68
2....	76	67	78	65	77	66	78	68	79	71	87	68	85	65	81	66	77	68	81	67	79	63	81	65	80	67	81	63
3....	86	62	92	60	85	62	85	67	88	68	91	66	83	67	87	62	86	64	85	66	85	62	84	63	85	63	88	56
4....	92	67	95	65	89	63	88	67	91	70	93	62	86	64	92	66	89	69	87	69	86	64	84	67	89	68	89	65
5....	93	67	98	68	91	63	91	69	93	71	96	61	93	67	91	63	89	72	86	73	89	64	85	71	89	72	91	67
6....	94	66	90	71	91	64	90	69	92	72	99	64	92	66	92	67	86	72	91	69	94	63	89	68	92	70	93	66
7....	98	66	86	68	88	65	90	71	88	71	96	66	90	67	90	66	80	68	89	70	89	67	86	69	86	69	88	66
8....	97	65	96	68	94	63	92	68	97	73	98	68	98	63	97	70	93	72	91	72	88	70	90	72	94	72	91	68
9....	97	66	101	66	95	66	93	71	96	72	100	64	95	69	96	62	96	72	94	68	96	55	93	65	96	63	95	61
10....	100	66	105	67	101	59	99	71	102	71	105	59	98	63	101	64	99	72	99	69	98	61	98	66	102	65	97	66
11....	99	69	105	66	98	61	98	72	102	74	104	62	97	64	100	67	98	73	93	75	89	66	93	70	99	69	94	67
12....	97	69	101	70	97	65	91	67	95	74	98	68	95	67	92	68	95	77	89	69	81	64	88	69	93	70	88	68
13....	97	69	90	70	86	66	88	67	92	71	95	67	87	67	90	67	87	73	91	72	90	66	92	69	93	70	90	66
14....	90	69	92	72	87	61	87	70	86	75	95	68	87	65	91	71	88	75	86	72	91	66	87	71	90	74	91	68
15....	89	65	94	71	87	66	85	69	92	73	91	69	86	68	91	70	91	73	89	72	82	66	91	70	94	73	92	65
16....	97	68	100	68	83	68	90	69	96	70	98	65	92	68	95	60	95	73	94	67	92	56	95	63	96	61	97	51
17....	94	68	99	68	96	63	92	67	98	72	101	60	95	60	96	67	95	68	92	68	89	63	93	68	98	65	94	65
18....	95	66	96	68	92	64	88	68	92	71	93	65	92	67	91	62	91	72	85	63	83	61	88	65	91	64	89	64
19....	96	62	86	61	85	58	80	61	84	64	87	55	87	62	86	51	82	66	78	57	76	45	80	55	85	58	83	55
20....	94	61	90	61	82	59	78	58	83	59	85	52	84	56	82	48	82	64	80	55	79	44	81	51	85	54	82	51
21....	90	53	94	52	89	48	85	58	89	60	91	49	90	50	88	50	85	62	84	59	85	47	84	59	88	52	83	50
22....	90	57	88	52	92	50	88	64	88	62	95	52	88	56	90	56	80	66	82	61	78	50	83	56	82	55	84	58
23....	94	62	96	52	92	58	88	66	92	68	94	58	92	60	89	66	89	70	70	61	71	59	75	59	78	65	74	58
24....	91	64	92	63	90	60	84	67	88	69	89	61	90	60	87	64	82	66	68	61	63	57	67	60	75	64	64	56
25....	78	68	75	68	79	64	74	68	75	68	74	65	85	62	72	66	70	63	69	60	72	56	70	58	70	61	74	58
26....	80	64	82	60	81	66	79	67	78	68	83	66	82	68	78	64	76	64	73	59	76	51	73	57	78	60	78	54
27....	86	66	86	62	81	64	82	70	87	70	92	67	89	67	89	66	85	70	86	66	85	61	84	62	87	64	87	59
28....	83	68	82	68	89	65	83	67	76	68	86	70	95	65	82	65	80	70	76	56	80	62	77	64	81	70	74	58
29....	68	62	80	59	64	61	67	56	75	61	65	53	74	70	75	54	75	57	70	52	69	47	70	51	75	51	71	49
30....	78	60	82	56	69	55	69	57	76	59	73	58	70	60	77	51	77	54	76	50	74	47	75	50	80	50	75	48
31....	86	65	87	55	78	58	76	62	81	67	79	59	78	62	85	63	84	62	82	56	80	47	82	56	85	55	84	49
Mns..	90.0	64.9	91.1	64.5	86.8	61.8	85.2	66.4	88.2	68.8	91.0	62.2	88.4	63.9	88.4	62.7	86.0	68.2	83.8	64.6	82.9	58.6	83.9	63.2	87.0	64.0	85.4	60.1

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT NO. 4, THE LAKE REGION.

Prof. HENRY J. COX, District Editor.

GENERAL SUMMARY.

The weather of August, 1911, in the Lake region does not present many features of sufficient interest so far as unusual occurrences are concerned as to require extended discussion. The averages of the various elements show few decided departures from normal values for the district as a whole, nor, indeed, for any considerable area within its confines. The distribution of precipitation, however, was locally very irregular in amount, because of conditions which developed a larger number of thunderstorms than ordinary for this period, especially over the southern and eastern sections. Temperature values were more seasonable during August than was the case throughout the three months immediately preceding, and the conditions with respect to sunshine, cloudiness, and wind were not far from the average.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

Portions of States lying within district No. 4	Mean temperature.	Departure from normal.	Mean precipitation.	Departure from normal.	Greatest 24-hour precipitation.	Number of days.				Prevailing wind direction.
						Precipitation.	Clear.	Partly cloudy.	Cloudy.	
Minnesota	61.1	−1.7	4.33	+0.65	1.19	11	10	14	7	nw.
Wisconsin	66.3	−0.9	3.17	+0.12	3.03	8	17	10	4	sw.
Illinois	71.8	+0.6	4.91	+2.14	1.43	12	13	13	5	ne.
Indiana	70.7	−1.1	3.26	+0.21	1.84	9	16	7	8	sw.
Upper Michigan	62.2	−0.4	3.05	−0.02	2.53	9	14	10	7	w.
Lower Michigan	66.4	+0.1	2.69	−0.16	3.36	8	15	11	5	sw.
Ohio	71.4	+0.7	4.79	+1.95	3.12	9	13	11	7	sw.
Pennsylvania	70.0	+0.1	5.76	+2.50	1.46	14	6	15	10	s.
New York	68.0	+1.6	3.73	+0.67	2.83	11	12	11	8	w.
Vermont	67.2	+1.7	3.73	−0.45	3.00	10	13	9	9	s.

TEMPERATURE.

The mean temperature for the month was below normal generally west of the eighty-fifth meridian, the departure reaching −1.7° over the Minnesota portion of the district. To the eastward the temperature was above the seasonal average, the mean departure increasing to +1.7° in the Champlain Valley, and to more than +3° in the region along the middle St. Lawrence River. No heat or cold of exceptional severity, however, was experienced in any portion of the district. The daily mean temperatures at no time differed from their respective normals by more than 12°, and the departures were usually less than 6°.

With the exception of the extreme western sections, the temperature was above normal during the greater portion of the first 17 days of the month, the maximum heat occurring generally on the 1st over the New York and Vermont sections, on the 10th over the area to the southward of Lake Erie and in northern Indiana, on the 6th–9th over the Lower Michigan Peninsula, and on the 15th throughout most of the remainder of the district. After the 17th the temperature was almost continually below the normal, the 20th, 21st, 27th, and 28th being the only days of widespread warmth, although at no time did the heat conditions cover all portions of the district.

The coldest weather of the month occurred in most sections on the 29th and 30th, although in some localities in Ohio and New York the first few days of the last decade marked the time of lowest temperatures. During the cool spell of the 29th–30th a few light frosts occurred in Shawano, Door, and Brown Counties, Wis.; Chippewa and Ingham Counties, Mich.; and in Clinton County, N. Y. The frost at Sault Ste. Marie, Mich., on the morning of the 30th, was sufficiently severe to cause considerable damage to garden truck, and some places in the vicinity of that city reported the formation of ice in exposed vessels.

The daily range of temperature was generally from 17° to 22°, except in the region to the south of Lake Erie, where the diurnal swing averaged only about 14°. The absolute range was 72°, from 101° at Berne, Ind., and Bucyrus, Ohio, on the 10th, to 29° at Stephens Mine, Minn., on the 23d, and at Thomaston, Mich., on the 29th.

PRECIPITATION.

While there was a decided excess in the amount of rainfall occurring during the month over that section of the district south of Lake Erie, the average amounts received throughout the remaining portions of the Lake region did not greatly differ from the normal values.

However, there was much irregularity in the local distribution of rainfall, so that the averages shown in the table give no conception of the actual conditions at any one point. In the Wisconsin section the monthly amounts of precipitation varied from 1.56 to 5.54 inches; in upper Michigan, from 1.10 to 6.57 inches; in lower Michigan, from 0.16 to 5.50 inches; in the Ohio section, from 2.49 to 8.33 inches; and in the New York section, from 1.09 to 8.20 inches. These irregularities are explained by the fact that the bulk of the rainfall in the regions noted occurred during local thunderstorms, of which there were a greater number than is usual for the season; and, while there were but few that occasioned loss of life or serious damage to property, a number were accompanied by excessive precipitation in the localities visited.

Droughty conditions have prevailed in the valley of Lake Champlain since the beginning of 1911, the deficiency at the end of August being nearly 7 inches. The situation with respect to precipitation in the New York

section of the district has been but little, if any, less serious than that of the extreme east. The conditions of these sections are instanced by the following extracts from the reports of Weather Bureau officials:

The average precipitation for the section (New York) was below normal every month this year, except February and August, and, as nearly all of August was comparatively dry, it will be seen that the section has undergone the exceptional experience of practically six months of deficient rainfall. During this period streams have fallen to extremely low stages or dried up altogether, and crops and pastures have in some cases been nearly ruined.—*Mr. Wilford M. Wilson, Section Director, Ithaca, N. Y.*

Navigation on Lake Champlain has been seriously impeded during the month by low water. On the 1st the Champlain Transportation Co. discontinued its stop at Adams Landing, and on the 26th the landing at St. Albans Bay was eliminated from their schedule, on account of the low water. On the 9th the water level of the lake was 0.85 foot above low-water mark, and, notwithstanding copious rainfall during the last half of the month, the level continued falling until the 27th. Since that date it has been stationary at 0.60 foot above low-water mark.—*Mr. John K. Hooper, Local Forecaster, Burlington, Vt.*

MISCELLANEOUS.

Severe storms.—While, as stated previously, the number of thunderstorms was greater than usual for August, comparatively few were of exceptional severity with regard to wind and lightning. A few cases of loss of life and damage to property by lightning were reported, but the latter was in most instances merely nominal. In several localities in the extreme eastern portion of the district some damage occurred as a result of flooding of cellars and basements and the washing out of roads and streets, as a result of the excessive rainfall accompanying the heavier storms. On the afternoon of August 18 a local storm of true tornadic type, but of very small size, occurred in the vicinity of Canton, N. Y., a description of which, by the official in charge of the local office of the Weather Bureau at that place, is given separate setting.

Fog.—The month was, as a rule, quite free from fog. At Duluth, Minn., and at Oswego, N. Y., dense fog occurred on seven days, but elsewhere throughout the district there was comparatively little, except over the St. Clair River, where navigation was greatly impeded by its occurrence on the 3d, 4th, 5th, 14th, and 26th.

Aurora.—An aurora was observed at Escanaba, Mich., on the evening of August 23.

TORNADO NEAR CANTON, N. Y.

By Mr. W. J. BENNETT, Local Forecaster.

From the Weather Bureau office at Canton, N. Y., were observed at about 3.20 p. m., August 18, two very large clouds in the north, dark gray in color, almost black, with a streak of light-gray cloud between. This streak soon assumed a funnel shape. It is uncertain whether the actual beginning of the tornado was observed, or whether at this time the intervening cloud masses broke away and rendered it visible from Canton. The people in the vicinity of the place where it struck the earth say that it occurred a little earlier—shortly after 3 p. m. The funnel-shaped cloud, as viewed from Canton, soon became quite distinct, with several filaments of partially developed columns near by, and from the top of the funnel appeared to rise masses of frothy, white cloud. It appeared to revolve rapidly, in a counter-clockwise direction, and its lower part became greatly elongated, dipping down toward the earth. At times parts of it seemed to break off and drift toward the earth, appearing in the distance like little white threads. At no time while under observation did the tornado cloud appear to reach, unbroken, from the clouds to the earth. The funnel had grown considerably thinner by 3.35 p. m., and it finally disappeared about 3.40 p. m. While under observation it drifted slowly from the north-northeast toward the northeast. It was constantly changing its shape and twisting from side to side, but its motion of progression appeared to be slow. No lightning appeared to come from the funnel cloud itself, but from the dark masses of cloud on all sides lightning was frequent and vivid. The color of the funnel was light gray.

At Canton the temperature dropped about 10° in 20 minutes, about the time the tornado was under observation. A slight fall (0.02 inch), followed by an equal rise in the atmospheric pressure, occurred at the same time. The highest wind velocity was 22 miles per hour from the west at 3.45 p. m. The wind was from the west until 4 p. m., changing then to the north, and to the northwest at 4.20 p. m. A slight sprinkle of rain fell from 4.03 to 4.05 p. m., and light rain began again at 4.15 p. m., becoming heavier between 6 and 8 p. m. In all 0.38 inch was recorded at the Canton station, but no hail fell. Much heavier rain is reported as having occurred at Ogdensburg, 19 miles to the west-northwest, between 3 and 4 p. m.

The tornado was reported as having done some damage out on the Bucks Bridge Road, about 4 miles from Canton, and on the afternoon of the 19th the writer drove out to investigate. No one had been injured, and it was found that the actual damage was slight, but many interesting things were learned about the storm.

The tornado was first seen from the James Coakley farm, near the northeastern boundary of Canton Township, about halfway between Canton and Bucks Bridge in a direction a little west of north. It passed southward through a cornfield, tearing up a few stalks and carrying them up into the air, but its path was narrow and the damage slight. On the edge of the cornfield it picked up some stacks of grain and tossed them about. The storm passed on, moving now toward the southeast, and tore off the top of a haystack, carrying the hay no great distance, but depositing it in the direction of its advance. It then crossed the road, broke off the top of an apple tree, and came within 75 feet of the Coakley residence. The only effect upon the house was to draw the soot and fire out of the kitchen stove and chimney. The soot and wood embers were drawn up in a column, which united with the funnel cloud.

The storm passed on to a shed to the south of the house, and tore off all the roofing paper from the roof. Bits of the paper were found nearly half a mile away, in the direction of the storm's advance and several hundred feet to the right and left of its path. Near the shed was a pile of boards, which seemed to be directly in the storm's path. These were taken up high into the air and spread over a pasture to a distance of 500 feet, many being broken in the fall. About 50 feet of the pasture fence was carried away, the rails going up in the air quite a distance.

Through the pasture and the fields the tornado moved in a southeastward direction, but left little or no trace, the ground being bare. Approaching the house of H. E. Eggleston, it curved toward the east and toward the house, tearing away a section of fence about 75 feet long in the rear of the house. The rails were carried into the air to a height estimated at 100 feet, and some of them were so large and heavy that a man could hardly lift one. A tree 10 or 15 feet to the south of a shed in the rear of the house was torn up with some of its roots, carried up higher than the house, and dropped between the house and the shed. The storm passed very near the house,

and then curved sharply to the south, twisting off a large apple tree not more than 75 feet distant. It jumped a rail fence to the south of the house without injuring it, and descended into an adjoining cornfield, where the effect of the storm was very interesting.

The corn was prostrated for a distance of about 200 feet, nearly the entire length of the field and for a width of about 60 feet. It was reported that some of the stalks were twisted off and carried high into the air, but most of them were simply prostrated. The direction in which the stalks lay proved conclusively the rotary nature of the storm and showed the direction of the rotation. In the center of the storm track the stalks lay at right angles to the direction of the storm's advance, their tops pointing toward the right. On the left they lay mostly in the same direction as in the center, but on the extreme left some were inclined backward. On the right of the center the stalks were parallel to the storm's path, pointing forward, and on the extreme right they were inclined inward, or toward the left.

Leaving the cornfield the tornado passed over the road, from Canton to Bucks Bridge, but did not touch ground again as far as can be learned, and disappeared, moving toward the southeast.

The noise accompanying the storm is reported as a loud whistling or whirling, rather than a roaring noise. The funnel where it touched the ground was very small, only a few feet in diameter, but its apparent path, as shown by the cornfield and by demolished fences, was much wider. This is explained by the fact that it switched from side to side rapidly, while moving forward rather slowly. As near to the funnel as 100 feet the wind was light and did no damage. Some of the débris, however, was driven with great force against the Eggleston house, breaking holes in the clapboarding.

At the Coakley place the passage of the funnel was followed in about 10 minutes by hail, lasting about 5 minutes, and after an interval of about 10 minutes a second fall of hail occurred. Some of the hailstones were of rather large size, ranging from that of peas to that of robin's eggs, but no great amount of hail fell. No hail fell in the immediate vicinity of the Eggleston place.

The storm was first observed from the Coakley place a little after 3 p. m., and passed thence to the Eggleston place, a distance of about a third of a mile, in about 20 minutes. The tornado cloud from first to final observation did not last much over half an hour, and the extreme length of its path of destruction was less than a mile.

No great amount of rain fell in the immediate vicinity of the tornado, probably not more than a quarter of an inch in all.

This tornado was a very small one, and did little damage; but as such storms are very rare in this part of the country, it seemed to deserve special attention.

TABLE 1.—*Climatological data for August, 1911. District No. 4, Lake Region.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Minnesota.																				
Cloquet	Carlton	800	....	59.8	.....	86	15	30	29	48	3.49	.....	0.90	0	8	14	7	10	nw.	S. B. Detwiler.
Duluth	St. Louis	1,133	40	61.0	− 3.9	85	15	42	29	32	3.02	− 0.51	0.83	0	11	6	20	5	ne.	U. S. Weather Bureau.
Floodwood	do	1,257	6	.....	.....	.....	.....	.....	.....	.....	4.06	.....	1.08	0	7	13	6	12	nw.	M. H. Schussler.
Stephens Mine	do	1,500	4	60.1	.....	87	20	29	23	43	5.40	.....	1.09	0	16	11	17	3	w.	Oliver Iron Mining Co.
Two Harbors	Lake	614	17	62.6	− 0.7	90	15	38	29	37	4.45	+ 0.75	1.00	0	10	11	15	5	ne.	G. W. Watts.
Virginia	St. Louis	1,434	17	61.8	− 0.5	85	20	33	29	35	5.54	+ 1.72	1.19	0	16	8	16	7	nw.	Oliver Iron Mining Co.
Wisconsin.																				
Appleton	Outagamie	795	10	69.2	+ 1.3	92	15	43	29	29	2.64	+ 0.29	0.97	0	10	19	10	2	s.	Wm. O. Thiede.
Ashland	Ashland	647	20	64.6	− 2.5	92	15	38	29	36	2.45	− 0.69	1.07	0	8	22	3	6	ne.	Sam Wheeler.
Bayfield	Bayfield	635	2	63.7	.....	90	15	43	29	28	4.35	.....	1.14	0	11	14	12	5	ne.	John P. Kiel.
Cecil	Shawano	804	13	66.3	− 0.6	90	15	40	29	34	2.73	+ 0.47	1.55	0	3	18	12	1	sw.	Louis W. Schmidt.
Florence	Florence	1,293	20	62.7[a]	− 0.7	86[a]	15	37[a]	29	42[a]	5.37	+ 2.17	1.66	0	5	21	6	4	n.	Fred S. Evans.
Fond du Lac	Fond du Lac	800	25	67.3	− 0.4	90	15	36	29	36	1.78	− 1.36	0.50	0	8	17	8	6	w.	Geo. W. Marshall.
Grand River Locks	Marquette	770	15	66.6	.....	94	15	33	29	37	2.96	− 1.02	0.72	0	10	25	4	2	sw.	Jerry Parkinson.
Green Bay	Brown	617	25	66.9	− 0.1	90	15	45	29	27	1.56	− 1.54	0.63	0	8	2	21	8	s.	U. S. Weather Bureau.
Iron River	Bayfield	1,096	2	63.6	.....	88	11	33	29	37	3.14	.....	0.95	0	10	24	1	6	w.	Winfield E. Tripp.
Kewaunee	Kewaunee	590	2	65.4	.....	87	17	42	29	33	2.44	.....	0.90	0	6	19	7	5	s.	Eugene V. Kimball.
Manitowoc	Manitowoc	616	60	65.6	− 0.9	89	9	42	29	29	3.28	+ 0.29	1.94	0	7	13	14	4	se.	Johanna Lups.
Menasha	Winnebago	764	14	.....	.....	.....	.....	.....	.....	.....	1.74	− 0.57	0.61	0	5	25	4	2	sw.	Geo. T. Allanson.
Menomonee Falls	Waukesha	842	2	68.8[e]	.....	93[e]	7	44[e]	29†	32[e]	3.67	.....	0.76	0	9	14	14	3	sw.	Arthur H. Christman.
Milwaukee	Milwaukee	681	40	68.6	− 0.1	90	7	50	29	28	1.99	− 0.83	0.85	0	9	14	14	3	ne.	U. S. Weather Bureau.
New London	Outagamie	762	15	67.0	− 1.0	91	15	38	29	32	3.15	+ 0.18	1.12	0	6	15	10	6	ne.	August H. Pape.
Oconto	Oconto	590	20	66.2	− 1.1	89	15	41	29	31	1.73	− 0.77	0.96	0	4	15	14	2	w.	Wm. K. Smith.
Oshkosh	Winnebago	744	22	67.9	− 0.9	91	16	41	29	34	2.60	− 0.24	0.60	0	8	23	7	1	sw.	Evan Vincent.
Pine River	Waushara	900	16	66.8	− 1.3	89	15	39	29	32	4.44	+ 1.46	1.20	0	8	12	16	3	nw.	Geo. H. Carpenter.
Plum Island	Door	588	3	65.3	.....	82	15†	51	23	23	3.43	.....	1.19	0	6	13	10	8	se.	Geo. C. Robinson.
Plymouth	Sheboygan	843	1	67.8[a]	.....	89[a]	15†	44[a]	29†	29[a]	4.81	.....	2.20	0	10	16[a]	9[a]	5[a]	se.	Paul O. Feldrappe.
Port Washington	Ozaukee	713	18	67.8	0.0	94	7	45	29	30	2.72	− 0.32	0.92	0	8	15	10	6	se.	Richard C. Kann.
Racine	Racine	633	14	69.4	− 1.2	94	7	46	29	33	5.54	+ 2.50	1.52	0	9	22	5	4	ne.	Daniel Davis.
Ripon	Fond du Lac	935	1	.....	.....	91	15	.....	.....	.....	3.35	.....	0.86	0	8	16	9	6	sw.	Ripon College.
Sheboygan	Sheboygan	831	12	67.7	− 1.3	91	9	45	29	32	4.88	+ 1.99	3.03	0	11	10	18	3	se.	Louis C. Meyer.
Sturgeon Bay	Door	600	12	64.0	− 2.2	87	15	38	30	33	1.96	.....	0.63	0	6	16	14	1	s.	Adam N. Dier.
Superior	Douglas	671	2	61.6	.....	86	15	40	29	32	3.32	.....	0.78	0	12	15	11	5	ne.	Edward B. Banks.
Waupaca	Waupaca	857	16	66.5[a]	− 1.6	91[a]	15	35[a]	29	41[a]	3.55	+ 0.14	1.32	0	6	12[a]	10[a]	8[a]	sw.	James H. Flagg.
Illinois.																				
Chicago	Cook	824	41	71.8	+ 0.6	92	16	59	24	20	3.72	+ 0.84	1.43	0	12	13	13	5	ne.	U. S. Weather Bureau.
Highland Park	Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.10	+ 3.43	1.35	0	.....	.....	.....	.....	.....	Jesse L. Smith.
Indiana.																				
Auburn	Dekalb	874	15	67.0	− 3.3	93	10	42	29	37	2.80	− 0.42	0.79	0	7	15	5	11	sw.	Mrs. Josie B. Kuhlman.
Berne	Adams	849	2	72.4	.....	101	10	47	29†	34	4.86	.....	1.84	0	10	18	6	7	sw.	Henry M. Reusser.
Elkhart	Elkhart	801	9	72.6[a]	.....	94[a]	10†	48[a]	30	33[a]	2.69	.....	0.90	0	9	16[a]	6[a]	8[a]	sw.	Dr. Miles Medical Co.
Fort Wayne	Allen	775	15	70.9	− 0.2	97	10	47	30	31	2.91	− 0.38	1.00	0	12	10	12	9	nw.	U. S. Weather Bureau.
Hammond	Lake	598	20	72.2	+ 0.7	96	4	44	31	42	2.95	+ 0.70	1.65	0	5	16	10	5	.....	Carson W. Whitney.
Howe	Lagrange	886	6	69.6	.....	96	10	42	30	38	2.82	.....	0.93	0	6	22	2	7	.....	James E. Zook.
South Bend	St. Joseph	726	18	70.0	− 1.7	92	10	46	29	31	4.21	+ 0.95	1.57	0	11	15	4	12	nw.	Henry H. Swaim.
Whiting	Lake	606	2	70.6	.....	90	7	53	30†	29	2.87	.....	1.11	0	9	17	9	5	ne.	D. H. Boyd.
Upper Michigan.																				
Baraga	Baraga	623	9	62.0	− 1.9	94	15	39	28†	49	.....	.....	.....	0	....	14	2	15	w.	D. S. S. & A. Ry.
Bargland	Ontonagon	1,300	1	62.5	.....	87	15	36	23	39	4.70	.....	1.85	0	10	17	13	1	w.	Frank McMonigal.
Blaney	Schoolcraft	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet	Houghton	1,246	23	61.4	− 0.8	80	13	44	29†	22	2.64	− 0.29	0.79	0	14	22	4	5	w.	E. S. Grierson.
Chatham	Alger	875	10	60.0	− 1.9	82	14	30	30	36	3.58	+ 0.41	1.24	0	13	13	11	7	n.	U. P. Experiment Sta.
Deer Park	Luce	610	10	61.8	+ 0.3	85	14	36	30	30	1.82	− 0.95	1.62	0	2	18	3	10	s.	Mrs. Sara E. McGaw.
Detour	Chippewa	585	10	65.3	.....	90[b]	13	39[b]	30	34	3.10	.....	1.30	0	4	22[b]	1[b]	6[b]	nw.	G. C. Reed.
Eagle Harbor	Keweenaw	622	12	60.8	− 1.5	79	13	42	29	24	2.26	− 0.61	0.90	0	6	17	7	7	w.	John Nolen.
Escanaba	Delta	612	38	63.4	− 1.1	81	9	43	29	22	3.52	− 0.09	1.20	0	10	11	16	4	s.	U. S. Weather Bureau.
Ewen	Ontonagon	1,147	10	60.7	− 0.8	85[a]	16	35[a]	29	36	2.41	+ 0.47	1.30	0	10	12[a]	4[a]	14[a]	sw.	W. B. Hatfield.
Grand Marais	Alger	610	10	63.2	+ 0.8	82	27	49	14	32	2.29	− 0.02	1.00	0	9	17	9	5	s.	Mrs. Lena Truedell.
Green	Ontonagon	622	0	67.0	.....	85	15	52	11	23	3.25	.....	1.19	0	8	15	6	10	.....	T. A. Green.
Houghton	Houghton	668	10	62.7	− 0.9	85	15	44	29	27	2.17	− 0.70	0.86	0	15	11	9	11	w.	U. S. Weather Bureau.
Humboldt	Marquette	1,536	14	61.4	+ 1.6	85	15	33	23†	39	1.10	− 1.39	0.35	0	5	19	3	9	w.	D. S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	10	63.7	− 0.4	88	15	40	29	36	6.57	+ 4.20	2.53	0	11	15	13	3	nw.	Chapin Mining Co.
Iron River	Iron	1,504	14	61.8	− 0.4	87	15	35	24	36	6.30	+ 2.42	1.70	0	10	15	13	3	sw.	Victor D. Laing.
Ironwood	Gogebic	1,520	8	63.4	− 0.5	87	14	37	30	31	1.59	− 0.93	0.31	0	10	21	5	5	sw.	J. V. Brennan.
Ishpeming	Marquette	1,536	11	60.8	− 1.9	83	15	39	29†	34	3.05	− 0.15	0.70	0	10	5	19	7	w.	Cleve'd Cliffs Iron Co.
Isle Royale	Keweenaw	610	4	55.5	.....	68	3†	41	14†	25	2.24	.....	0.80	0	6	20	3	8	sw.	J. A. Malone.
Mackinac Island	Mackinac	831	10	64.1	− 1.4	82	14	41	31	30	3.91	+ 0.31	1.12	0	8	7	14	10	w.	M. I. S. P. Com.
Maple Ridge	Delta	.....	5	61.6	.....	86	15	34	30	34	5.28	.....	1.32	0	9	18	6	7	s.	Herman Johnson.
Marquette	Marquette	734	40	63.4	− 0.1	86	13	45	29	25	1.59	− 1.27	1.06	0	10	5	16	10	s.	U. S. Weather Bureau.
Menominee	Menominee	581	12	66.2	− 0.6	86	5	43	29	24	1.84	− 0.73	0.96	0	4	19	8	4	sw.	C. & N. W. Ry.
Munising	Alger	631	14	62.9	+ 1.4	86	14	39	30	33	2.96	+ 0.46	0.99	0	13	17	9	5	s.	Albert Oas.
Newberry	Luce	773	9	62.4	+ 0.9	82	13†	43	12†	33	2.20	+ 0.15	1.32	0	6	13	14	4	s.	John Brown.
Powers	Menominee	868	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. & N. W. Ry.
St. Ignace	Mackinac	593	21	63.4	− 0.4	82	27	40	30	35	1.51	− 1.35	0.50	0	4	17	8	6	w.	D. S. S. & A. Ry.
Sault Ste. Marie	Chippewa	614	23	62.2	+ 1.6	83	14	40	30	33	2.39	− 0.75	0.94	0	6	9	10	12	nw.	U. S. Weather Bureau.
Thomaston	Gogebic	1,347	14	61.4	− 1.4	86	3	29	29	42	4.36	+ 1.25	1.70	0	9	1	26	4	w.	D. S. S. & A. Ry.
Victoria	Ontonagon	1,263	1	63.2	.....	86	15	41	29	30	3.65	.....	1.12	0	15	19	8	4	nw.	R. S. Schultz, jr.
Watersmeet	Gogebic	.....	2	61.4	.....	86	15	33	29	37	3.07	.....	0.90	0	14	6	12	13	nw.	B. N. Grant.
Whitefish Point	Chippewa	610	21	60.8	− 0.6	81	27	37	30	26	2.52	− 0.39	1.00	0	9	21	0	10	nw.	Robert Carlson.
Lower Michigan.																				
Adrian	Lenawee	770	33	71.4	− 0.5	97	6	46	28†	33	4.32	+ 1.13	3.30	0	3	7	10	4	nw.	B. F. Gibbs.
Allegan	Allegan	698	20	70.4	+ 0.4	96	4†	41	29	41	2.82	+ 0.44	0.71	0	9	3	20	8	w.	Pere Marquette R. R.
Alma	Gratiot	750	24	67.2	− 0.1	93	6	39	30	37	1.85	− 0.88	1.03	0	5	14	16	1	sw.	P. M. Smith.
Alpena	Alpena	609	38	64.5	+ 0.7	90	9	40	30	34	1.22	− 2.12	0.40	0	9	6	24	1	nw.	U. S. Weather Bureau.
Ann Arbor	Washtenaw	930	31	69.9	+ 0.7	92	10	45	30	32	2.04	− 0.63	0.62	0	8	12	12	7	ne.	University of Michigan.
Arbela	Tuscola	728	15	69.0	+ 0.2	94	5†	34	30	42	4.11	+ 1.32	1.44	0	6	2	21	8	sw.	Wm. Atkin.
Battle Creek	Calhoun	822	27	69.8	− 0.9	96	6†	41	30	36	3.14	+ 0.13	0.71	0	8	22	4	5	sw.	Elmer E. Sager.

TABLE 1.—*Climatological data for August, 1911. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Lower Michigan—Con.																				
Bay City	Bay	593	15	69.4	+ 1.1	92	5†	44	29	34	2.90	− 0.19	1.50	0	6	28	2	1	ne.	Pere Marquette R. R.
Benzonia	Benzie	832	15																	Martin S. Joiner.
Berlin	St. Clair		22	68.0	− 0.2	93	6	34†	30	38	4.14	+ 1.33	0.98	0	13	2	27	2	sw.	R. O. Gould.
Big Rapids	Mecosta	906	15	66.5	+ 0.4	90	6	36	30	37	1.37	− 1.41	0.38	0	7	22	7	2	w.	Charlie Gay.
Bloomingdale	Van Buren		7	68.6	.....	93	6†	42	29	34	3.48	.....	0.87	0	11	26	2	3	nw.	John M. Haven.
Cadillac	Wexford	1,293	2	66.8	.....	88	7	42	24	32	2.05	.....	0.60	0	8	23	8	0	n.	Water & Light Co.
Cassopolis	Cass	903	10								0.86	− 2.02	0.30	0	4	27	0	4	w.	Michigan Central R. R.
Charlevoix	Charlevoix	610	13	64.4	− 1.9	88	4†	42	30	36	3.69	− 1.86	0.92	0	8	20	6	5	nw.	Pere Marquette R. R.
Charlotte	Eaton		7	68.9	.....	91	10	40	30	41	2.23	.....	1.60	0	6	23	5	3	sw.	City of Charlotte.
Cheboygan	Cheboygan	611	21	62.5	+ 0.2	88	1	35	30	38	3.60	+ 0.57	0.82	0	7	7	21	3	sw.	E. A. Bouchard.
Clinton	Lenawee	830	21	71.2	+ 1.1	96	10	44	29†	37	2.90	+ 0.47	0.90	0	7	20	6	5	sw.	David Woodward.
Coldwater	Branch	984	14	71.0	+ 1.1	93	7†	43	30	37	3.40	− 0.66	1.77	0	6	23	4	4	s.	L. S. & M. S. R. R.
Concord	Jackson		6	69.3	.....	97	7	41	30	38	4.72	.....	3.10	0	8	21	9	1	sw.	W. N. Armstrong.
Croton	Newago	685	3	68.6	.....	96	6	41	29†	36	1.27	.....	0.33	0	10	4	26	1	sw.	G. R. M. Power Co.
Detroit	Wayne	730	40	70.6	+ 0.7	90	10	48	30	24	1.31	− 1.46	0.32	0	9	11	15	5	e.	U. S. Weather Bureau.
Durand	Shiawassee	799	4																	H. J. Tobin.
East Tawas	Iosco	590	14	64.6	− 1.2	85	15	40	29	30	2.32	+ 0.02	0.80	0	7	25	5	1	sw.	Detroit & Mackinaw Ry.
Eloise	Wayne	640	14	70.6	+ 0.4	93	10	43	30	33	1.82	− 0.84	0.37	0	9	13	14	4	se.	John Gilmore.
Flint	Genesee	730	22	67.3	− 0.2	91	6	40	30	42	3.03	+ 0.46	1.10	0	9	12	13	6	w.	William L. Fisher.
Frankfort	Benzie	589	7	66.6	.....	82	7	45	24	27	2.05	.....	0.60	0	6	20	0	11	s.	Geo. Morency.
Ganges	Allegan	665	2	68.4	.....	88	10	45	30	30	3.39	.....	1.01	0	11	21	6	4	sw.	H. H. Hutchins.
Gaylord	Otsego	1,367	11	65.2	+ 2.5	86	3†	45	29	28				0	.....	18	0	13	sw.	Michigan Central R. R.
Gladwin	Gladwin	794	15	68.6	+ 2.5	93	6	40	29†	42	5.50	+ 3.11	1.40	0	6	25	4	2	s.	Geo. R. Smith.
Grand Haven	Ottawa	628	30	66.8	− 1.0	87	10	46	30	27	1.20	− 1.38	0.50	0	8	14	14	3	sw.	U. S. Weather Bureau.
Grand Rapids	Kent	707	22	69.4	− 0.6	92	6	45	30	28	2.29	− 0.30	0.87	0	10	9	15	7	w.	Do.
Grape	Monroe	625	21	71.0	+ 0.9	90a	6	45	29	31	2.56	− 0.06	1.06	0	11	17	10	4	sw.	Joseph W. Morris.
Grass Lake	Jackson	989	5	69.9	.....	96	10	43	29†	36	2.24	.....	0.61	0	8	22	5	4	w.	Menzo Conklin.
Grayling	Crawford	1,147	21	63.9	− 0.3	87	5†	30	17	45	1.64	− 1.27	0.60	0	9	13	13	5	nw.	S. N. Insley.
Harbor Beach	Huron	635	23			90	9				2.97	+ 0.37	0.95	0	6	24	5	2	s.	Pere Marquette R. R.
Harrison	Clare	1,159	18																	Do.
Harrisville	Alcona	616	27	64.6	− 0.7	90	9	43	30	34	2.49	− 1.06	0.97	0	10	11	15	5	sw.	D. W. Mitchell.
Hart	Oceana	698	19					45	26		1.95	− 0.52	0.80	0	4	20	7	4	sw.	Pere Marquette R. R.
Hayes	Huron	620	21	67.7	+ 1.2	90	6	42	30	34	3.91	+ 1.31	1.12	0	9	13	14	4	ne.	C. F. Llepprandt.
Highland	Oakland	830	19								1.30	− 1.05	0.60	0	7	.....	.....	.....	.....	A. D. De Garmo.
Hillsdale	Hillsdale	1,150	14	69.0	+ 0.1	94	6	42	29	36	4.14	+ 1.66	2.01	0	7	15b	8b	6b	w.	C. L. Herron.
Holland	Ottawa	610	5	67.8	.....	92	26	42	30	45	1.79	.....	0.51	0	9	14	17	0	nw.	City of Holland.
Howell	Livingston	924	19	68.5	+ 0.6	91	9†	40	30	36	3.43	+ 0.81	2.40	0	7	15	10	6	sw.	Frank Sharp.
Ivan	Kalkaska		22	66.0	+ 0.8	89	6†	37	24	38	2.58	− 0.29	0.74	0	12	10	21	0	sw.	O. L. Giddings.
Jackson	Jackson	927	14	70.4	− 0.4	95	6†	41	29	40	2.44	+ 0.26	0.55	0	10	12	16	3	w.	City of Jackson.
Jeddo	St. Clair	667	22	68.8	+ 0.9	93	7	43	30	33	1.88	− 0.99	0.75	0	6	16	10	5	s.	William Bice.
Kalamazoo	Kalamazoo	955	35	70.6	+ 0.7	99	18	40a	29	37	3.08	+ 0.36	1.23	0	7	14	14	3	sw.	Kalamazoo Asylum.
Lansing (Agr. College)	Ingham	820	47	68.2	− 0.4	93	6	40	30	38	1.48	− 1.38	0.51	0	9	11	13	7	s.	U. S. Weather Bureau.
Lansing (Capitol)	do	881	24	70.0	+ 1.5	93	6†	42	30	37	1.69	− 0.90	0.72	0	9	9	8	14	sw.	State board of health.
Lapeer	Lapeer	827	12	69.8	+ 2.9	92	9	38	30	42	2.51	+ 0.21	1.05	0	8	2	29	0	sw.	Michigan Home.
Ludington	Mason	586	13	66.0	− 1.6	87	7	42	24†	33	3.27	+ 1.37	1.35	0	5	26	5	0	sw.	Pere Marquette R. R.
Luther	Lake	1,028	1	66.0	.....	94	6	35	29	37	3.24	.....	0.97	0	11	8	21	2	w.	John W. Nichoson.
Mackinaw	Cheboygan	592	15	64.8	− 0.8	86	27	38	30	28	2.07	− 1.95	0.80	0	6	18	9	4	n.	G. R. & I. Ry.
Mancelona	Antrim	1,121	15	66.0	+ 1.5	88	7	39	24	36	0.89	− 1.44	0.30	0	6	24	26	1	sw.	Do.
Manistee	Manistee	600	14	68.2	+ 3.2	91	1†	43	24	31	3.51	+ 1.26	1.40	0	8	26	5	0	sw.	Pere Marquette R. R.
Midland	Midland	604	12	69.6	+ 0.7	98	6†	41	30	44	1.10	− 0.98	0.50	0	4	17	8	6	s.	Do.
Morenci	Lenawee	811	4	69.8	.....	92	10	46d	30	33	4.89	.....	3.36	0	6	12	9	10	w.	George J. Tripp.
Mount Clemens	Macomb	615	11			90	16†				3.75	+ 2.01	1.25	0	7	2	21	8	ne.	Waterworks.
Mount Pleasant	Isabella	826	12					39e	31							21e	2e	3e	w.	Pere Marquette R. R.
Muskegon	Muskegon	587	15	69.3	+ 0.8	88	7	48	25†	30	0.50	− 1.57	0.25	0	3	24	5	2	w.	G. R. & I. Ry.
Old Mission	Grand Traverse	858	17	66.8	− 0.3	84a	6	46a	30	27	3.81	+ 0.81	1.10	0	10	8a	22a	0a	n.	E. O. Ladd.
Olivet	Eaton	934	21	67.8	− 0.2	90	6	40	30	29	2.90	− 0.25	0.72	0	10	21	3	7	w.	G. A. Knapp.
Omer	Arenac	616	12	68.2	+ 3.4	92	15	35	30	45	1.20	− 0.82	0.60	0	3	7	15	9	sw.	Detroit & Mackinaw Ry.
Onaway	Presque Isle	826	8	61.8	− 1.4	89	20	31	24	54				0	.....	23	5	3	se.	Do.
Owosso	Shiawassee	731	14	70.6	+ 0.6	93	9	42	29†	36	2.94	+ 0.63	1.60	0	8	6	25	0	n.	Owosso Sugar Co.
Petoskey	Emmet	660	21	64.9	− 0.2	85	7	40	30	30	1.21	− 1.72	0.40	0	9	9	18	4	w.	G. R. & I. Ry.
Plymouth	Wayne	725	14					40	30		3.00	+ 1.05	1.00	0	6	18	7	6	nw.	Pere Marquette R. R.
Pontiac	Oakland	935	11	70.0	+ 1.5	91	9	43	30	32	1.92	− 0.89	0.60	0	7	26	1	4	s.	Fred W. Shaw.
Port Austin	Huron	618	14	69.2	.....	97e	8	40	25	40	2.96	.....	0.82	0	9	17	3	11	se.	Pere Marquette R. R.
Port Huron	St. Clair	639	36	68.2	+ 0.9	91	7	48	30	29	2.22	− 0.41	0.75	0	10	9	13	9	ne.	U. S. Weather Bureau.
Reed City	Osceola	1,033	14	68.6	+ 1.5	93	6	38	30	39	2.20	+ 0.01	0.80	0	5	7	0	24	w.	Pere Marquette R. R.
Roscommon	Roscommon	1,141	7	63.6	.....	88b	5	31b	24	42	2.59	.....	0.72	0	10	7b	20b	22b	nw.	State Forestry Com.
Saginaw	Saginaw	601	9	70.2	.....	95	5†	43	30	35	2.75	.....	0.90	0	7	13	18	0	sw.	Postmaster.
Saginaw West Side	do	601	16	69.6	+ 0.2	95	6	43	29	36	2.36	− 0.56	1.27	0	6	6	20	5	sw.	Robert B. Hudson.
St. James	Charlevoix	681	5	63.8	.....	78	20	46	29	27	2.76	.....	0.87	0	10	13	12	6	sw.	James Malone.
St. Joseph	Berrien	593	24	69.0	− 1.5	88	10	36	26	37	2.23	+ 0.04	1.15	0	8	11	6	14	sw.	City of St. Joseph.
Sandusky	Sanilac	790	2	66.3	.....	92a	7	34a	30	38	1.68	.....	0.58	0	8	13	12	5	nw.	Pere Marquette R. R.
Saranac	Ionia	639	16	68.8	+ 0.5	96	6	40	29	40	3.28	+ 0.15	1.73	0	5	11	8	12	sw.	John Wallington.
South Haven	Van Buren	585	15	66.8	− 0.9	82	28	42	30	32	4.40	+ 1.51	1.20	0	9	17	13	1	se.	Mrs. M. E. De Diemar.
Stanton	Montcalm	880	17	67.6	− 3.3	89	6†	40	20	45	0.16	− 2.08	0.08	0	2	23	3	5	sw.	City of Stanton.
Thornville	Lapeer	975	34	67.2	− 2.3	94	10	38	30	29	3.46	− 0.24	1.02	0	10	11	16	4	se.	J. S. Calkins.
Traverse City	Grand Traverse	588	14	67.8	+ 0.5	90	7	42	30	34	1.08	− 1.53	0.57	0	3	1	18	12	w.	G. R. & I. Ry.
Vassar	Tuscola	641	10	69.0	.....	97a	1	33a	30	40	2.04	.....	0.68	0	6	9	18	3	sw.	Pere Marquette R. R.
Wasepi	St. Joseph	842	14	69.6	+ 0.7	90	10	40	30	32	3.32	+ 0.06	0.80	0	10	24	0	7	ne.	Charles A. Palmer.
West Branch	Ogemaw	973	7													22	1	8	w.	Michigan Central R. R.
Woodlawn	Montmorency		9	62.6	− 2.3	86	7†	31	30	39	3.49	+ 0.39	0.98	0	8	17	9	5	sw.	T. C. Mathews.
Ypsilanti	Washtenaw	736	26	69.8	+ 1.0	92	10	44	30	34	1.73	− 0.92	0.41	0	9	0	30	1	sw.	Orin J. Bemiss.
Ohio.																				
Akron	Summit	1,081	24	72.0e	+ 2.1	96e	10	48e	21	33	4.88	+ 1.33	1.32	0	11	11	5	15	sw.	Prof. C. R. Olin.
Benton Ridge	Hancock	800	18	72.0	+ 0.4	99	10	47	20†	36	3.59	+ 0.90	1.20	0	6	13	13	5	sw.	J. W. Powell.
Bowling Green	Wood	670	30	71.0	+ 0.5	95	10	46	30	35	3.92	+ 1.11	1.23	0	7	13	12	6	sw.	G. C. Houskeeper.
Bucyrus	Crawford	1,000	17	72.8	+ 1.8	101	10	46	20†	41	5.06	+ 2.65	1.45	0	10	14	6	11	sw.	James R. Hopley.
Cleveland (1)	Cuyahoga	762	40	70.7	+ 0.3	91	10	53	20	25	5.18	+ 2.03	2.43	0	11	8	14	9	n.	U. S. Weather Bureau.
Cleveland (2)	do	754	14	71.0	+ 0.7	94	10	50	20	26	6.08	+ 3.42	2.75	0	9	16	5	10	se.	Rev. F. L. Odenbach, S. J.
Conneaut	Ashtabula	675	1	71.0	.....	95	1†	45	20	32	4.97	.....	1.34	0	10	16	7	8	ne.	E. L. Ransom.
Defiance	Defiance	712	17	71.4	+ 0.3	98	5†	44	30	41	2.49	+ 0.14	0.97	0	9	14	9	8	sw.	John F. Heilshorn.
Findlay	Hancock	776	22	72.4	+ 0.5	100	10	45	20	42	4.67	+ 1.96	1.01	0	13	21	2	8	sw.	Dr. E. A. Moser.
Fremont	Sandusky	628	9	72.5	.....	100	10	49	21	42	3.53	.....	0.90	0	6	18	6	7	sw.	E. Stanley Thomas.
Hedges	Paulding	725	17	71.4	+ 0.6	100	10	45	29†	41	2.61	− 0.21	0.88	0	8	19	8	4	sw.	Charles Stutzman.
Hillhouse	Lake	997	18	69.6	+ 1.4	92	1†	41	20	35	4.83	+ 1.78	1.70	0	13	8	20	3	ne.	J. W. Doncaster.
Hiram	Portage	1,260	31	70.4	+ 1.5	94	10	48	20	31	5.02	+ 1.79	1.24	0	8	8	18	5	sw.	Prof. G. H. Colton.

TABLE 1.—*Climatological data for August, 1911. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Ohio—Continued.																				
Hudson	Summit	1,153	50	72.0	+ 2.3	99	10	43	21	43	5.65	+ 2.09	1.75	0	11	20	7	4	nw.	Dr. W. I. Chamberlain.
Lima	Allen	875	12	70.6	− 0.9	96	10	51	21	31	6.45	+ 3.68	2.72	0	8	10	15	6	sw.	Miss Ollie De Long.
Medina	Medina	944	23	70.4	− 0.3	97	10	43	21	40	6.73	+ 3.57	2.42	0	11	19	4	8	s.	F. W. Clark.
Montpelier	Williams	880	19	70.8	+ 0.8	96	10	46	29†	38	4.49	+ 1.64	1.47	0	6	23	3	5	w.	G. L. Laser.
Napoleon	Henry	680	24	71.9	+ 0.8	96	10	45	30	35	3.13	+ 0.50	1.08	0	8	17	10	4	n.	A. C. Senter.
New Bremen	Auglaize	1,038	18	72.1	− 0.3	100	10	48	20†	32	5.24	+ 2.56	1.70	0	7	10	16	5	sw.	Miss Lillian Grothaus.
North Royalton	Cuyahoga	1,000	18	70.2[a]	− 0.2	94[a]	10	45[a]	20	33	7.36	+ 3.75	2.74	0	10	13	13	5	w.	W. S. Edgerton.
Norwalk	Huron	719	25	71.6	+ 1.1	97	10	45	21	40	6.20	+ 3.09	1.40	0	11	6	17	8	w.	Giles R. Gregory.
Oberlin	Lorain	855	36	71.0	+ 1.6	96	7†	45	21	38	8.33	+ 5.73	3.12	0	11	12	4	15	sw.	Prof. F. F. Jewett.
Ottawa	Putnam	720	16	71.7	− 0.4	97	10	47	20	35	2.87	+ 0.17	1.48	0	7	9	16	6	sw.	Prof. J. T. Maidlow.
Sandusky	Erie	629	34	71.8	+ 0.3	93	10	56	21	26	5.31	+ 1.94	2.52	0	9	10	14	7	ne.	U. S. Weather Bureau.
Tiffin	Seneca	775	29	72.0	+ 1.1	95	10	49	30	32	4.44	+ 1.80	1.32	0	9	15	11	5	w.	Prof. T. H. Sonnede ker.
Toledo (1)	Lucas	769	40	71.8	+ 0.9	94	10	49	30	24	3.87	+ 1.17	1.89	0	10	16	9	6	sw.	U. S. Weather Bureau.
Upper Sandusky	Wyandot	854	28	71.3	+ 0.3	98	10	46	20	37	5.71	+ 3.03	1.89	0	10	5	18	8	nw.	Robert E. Tracht.
Vickery	Sandusky	588	18	72.2	+ 1.1	100	10	45	21	42	2.94	+ 0.16	0.77	0	8	9	14	8	sw.	John W. Barr.
Wauseon	Fulton	780	39	70.4	+ 0.1	95	5†	45	30	38	4.11	+ 1.40	2.20	0	12	10	15	6	s.	Thomas Mikesell.
Willoughby	Lake	649	17	.....	.....	.....	.....	.....	.....	.....	3.97	+ 1.55	1.09	0	12	13	10	8	w.	C. M. Richardson.
Pennsylvania.																				
Erie	Erie	658	38	70.0	+0.1	90	1	53	21	21	5.76	+2.50	1.46	0	14	6	15	10	s.	U. S. Weather Bureau.
New York.																				
Adams Center	Jefferson	540	20	69.3	+0.5	92	1	48	20†	27	3.42	+0.64	0.81	0	11	13	14	4	w.	A. E. Cooley.
Angelica	Allegany	1,340	28	65.6	+0.7	88	8†	38	20†	41	7.27	+3.20	1.97	0	18	3	16	12	w.	Charles P. Arnold.
Appleton	Niagara	270	20	70.1	+2.7	97	1†	47	31	34	2.21	−0.46	0.81	0	10	19	8	4	ne.	H. A. Van Wagoner.
Auburn	Cayuga	715	42	69.2	+0.4	92	7	47	30	30	3.92	+0.50	1.50	0	9	17	12	2	s.	A. H. Underwood.
Avon	Livingston	585	16	69.6	+2.1	97	4	44	31	38	2.54	−0.60	1.00	0	8	11	13	7	.....	W. G. Markham.
Blue Mountain Lake	Hamilton	1,750	11	.....	.....	.....	.....	.....	.....	.....	5.58	+1.93	1.47	0	8	15	12	4	w.	B. F. Merwin.
Brockport	Monroe	537	15	71.4	+2.7	96	1	46	30	30	2.47	−0.12	0.51	0	13	12	15	4	.....	W. H. Lennon.
Buffalo	Erie	767	60	69.8	+1.0	92	1	49	30	22	4.61	+1.62	1.20	0	11	11	11	9	sw.	U. S. Weather Bureau.
Canton	St. Lawrence	448	17	68.0	+1.4	93	1	39	30	32	2.67	−0.02	0.56	0	11	7	13	11	sw.	Do.
Cape Vincent	Jefferson	246	6	69.0	.....	91	2	41	31	30	2.57	.....	1.15	0	9	13	10	8	s.	Verne M. Rice.
Carvers Falls	Washington	243	13	67.6	+1.5	92	3	44	20	35	4.53	+1.19	2.83	0	5	21	6	4	s.	Washburne Fancher, C. F.
Chazy	Clinton	151	11	70.7	+4.3	93	1†	45	30	31	2.47	−0.33	1.00	0	6	19	6	6	n.	W. R. North.
Dannemora	do	1,490	6	68.2	.....	92	2	44	30†	31	2.80	.....	0.68	0	12	9	12	10	s.	Dr. W. N. Thayer.
Elba	Genesee	500	12	68.3	+1.2	94	1	46	20	32	4.01	+1.52	0.90	0	11	18	4	9	sw.	Joseph S. Willord.
Faust	Franklin	1,550	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Santa Clara Lumber Co.
Fayetteville	Onondaga	530	10	71.0	+2.4	95	7	45	30	34	3.10	−0.60	1.22	0	9	13	12	6	sw.	Dana H. Wells
Gabriels	Franklin	1,729	9	63.4	.....	91	2	35	30	37	3.01	.....	1.02	0	12	13	8	10	nw.	Gabriel's Santarium.
Harkness	Clinton	622	9	68.6	+3.0	94	1	41	31	32	2.60	+0.38	0.68	0	9	22	6	3	w.	J. W. Harkneiss.
Hemlock Lake	Livingston	900	13	69.2	+0.7	89	8	48	30†	24	4.09	+1.30	.....	0	8	11	6	14	s.	D. H. Westbury.
Hunt	do	1,321	12	68.3	+0.8	92	1†	43	20	34	4.91	+2.13	1.75	0	8	5	19	7	sw.	W. S. Barager.
Ithaca	Tompkins	928	33	68.8	+0.6	94	10	45	21	39	4.15	+0.91	1.72	0	12	6	11	14	se.	U. S. Weather Bureau.
Keene Valley	Essex	1,000	13	67.2	+3.0	95	2	39	31	43	1.94	−1.69	0.92	0	8	14	11	6	s.	E. R. Wells.
King Ferry	Cayuga	.....	11	.....	.....	.....	.....	.....	.....	.....	3.36	−0.04	1.33	0	9	10	13	8	se.	Lucius A. Goodyear.
Lake George	Warren	350	14	67.2	+0.5	90	6†	46	22	35	4.54	+0.42	1.92	0	12	14	10	7	sw.	Charles Forsell.
Lake Placid Club	Essex	1,864	3	61.8	.....	89	1	36	21	36	3.04	.....	0.79	0	11	14	14	3	nw.	Henry von Hoevenberg.
Le Roy	Genesee	920	21	68.7	+1.4	90	1	48	30†	33	3.37	+0.28	0.70	0	13	13	2	16	se.	F. W. Ball.
Lockport	Niagara	650	24	69.1	+0.7	92	1	44	30	26	2.86	+0.34	0.82	0	11	16	5	10	sw.	J. E. Wakeman.
Lowville	Lewis	900	44	65.8	+0.9	92	1	40	31	38	3.86	+0.64	0.90	0	9	15	10	6	w.	Charles J. Rice.
Moira	Franklin	200	11	69.8	+3.5	99	1	40	30†	33	6.24	+2.99	2.39	0	12	16	12	3	w.	C. E. McBride.
Nehasane	Herkimer	1,750	3	62.8	.....	89	1†	35	21	40	3.00	.....	0.74	0	13	13	14	4	w.	L. W. Brown.
North Lake	do	1,822	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John F. Redmond.
Ogdensburg	St. Lawrence	175	27	71.6	+4.1	98	2	45	30	34	2.78	−0.26	0.82	0	8	12	19	0	se.	State Hospital.
Oldforge	Herkimer	1,733	3	63.0	.....	89	1	36	21	38	3.75	.....	0.70	0	17	11	10	10	w.	Mrs. S. W. Nelson.
Oswego	Oswego	335	41	69.0	+0.2	90	1	51	30	24	3.86	+1.17	1.34	0	11	7	12	12	s.	U. S. Weather Bureau.
Otto	Cattaraugus	1,410	7	67.2	.....	87	1†	45	12†	36	8.20	.....	1.60	0	15	15	12	4	.....	William J. Wienk.
Palermo	Oswego	460	52	.....	.....	.....	.....	.....	.....	.....	3.11	+0.26	1.03	0	12	21	5	5	s.	E. B. Bartlett.
Perry City	Schuyler	1,038	31	65.8	−0.3	88	1†	41	21	37	5.15	+1.54	1.42	0	12	7	8	16	nw.	W. H. Jeffers.
Philadelphia	Jefferson	485	5	69.0	.....	92	1	42	30†	30	3.51	.....	0.86	0	16	8	19	4	w.	E. D. Babcock.
Potsdam	St. Lawrence	335	5	71.0	+4.6	98	2	41	30	34	4.26	+0.86	1.22	0	11	.....	.....	.....	.....	A. E. Sutherland.
Raquette Lake	Hamilton	.....	3	63.2	.....	87	1	41	26	34	3.75	.....	0.98	0	11	12	9	10	w.	R. J. Dunning.
Rochester	Monroe	523	82	70.4	+2.1	94	1	50	20	28	4.29	+1.33	2.55	0	11	6	13	12	sw.	U. S. Weather Bureau.
Romulus	Seneca	719	19	.....	.....	93[b]	9†	48[b]	30	33[b]	.....	.....	.....	0	.....	.....	.....	.....	.....	John H. Coryell.
Shortsville	Ontario	740	12	69.5	+1.5	91	8	48	30†	28	3.94	+1.15	1.18	0	9	14	12	5	nw.	C. H. Latting.
Skaneateles	Onondaga	.....	16	.....	.....	.....	.....	.....	.....	.....	3.69	+0.26	1.03	0	9	.....	.....	.....	.....	Edward Conron.
Syracuse	do	597	9	69.3	+0.7	89	1	48	30	27	2.45	−0.88	1.35	0	10	6	13	12	s.	U. S. Weather Bureau.
Ticonderoga	Essex	344	13	68.6[b]	+0.7	92[b]	1	49[b]	20†	35[b]	1.09	−2.03	0.70	0	8	19	6	6	w.	Miss Eva De Lano.
Tupper Lake	Franklin	1,522	11	65.9	+4.6	91	1	42	31	38	2.38	−1.43	0.58	0	12	17	9	5	w.	Rev. A. W. Maddox.
Volusia	Chautauqua	1,167	12	67.4	+0.7	89	1	45	21†	33	6.34	+3.69	2.14	0	11	12	13	6	s.	Benjamin Breads.
Wanakena	St. Lawrence	.....	1	65.2	.....	92	1†	37	30†	41	2.15	.....	0.75	0	14	8	17	6	sw.	J. Otto Hamele.
Watertown	Jefferson	737	19	69.0	+0.9	92	1	46	30	27	4.15	+0.66	1.52	0	13	14	12	5	sw.	H. P. Dunlap.
Wedgewood	Schuyler	1,430	22	69.0	+1.2	97	10	47	30	37	5.03	+0.66	2.02	0	11	19	5	7	nw.	O. F. Corwin.
Westfield	Chautauqua	837	15	68.1	−0.4	88	7†	49	20†	27	4.63	+1.74	1.14	0	13	10	8	13	.....	John R. Rogers.
Youngstown	Niagara	.....	9	.....	.....	.....	.....	.....	.....	.....	1.57	.....	0.89	0	4	3	28	0	sw.	B. V. Brookins.
Vermont.																				
Burlington	Chittenden	404	3	68.4	+2.3	92	1†	47	31	34	3.83	−0.18	1.61	0	10	11	8	12	s.	U. S. Weather Bureau.
Cornwall	Addison	507	17	70.0	+2.1	95	1	46	24	35	3.68	−0.05	1.90	0	9	16	6	9	s.	C. H. Lane.
Enosburg Falls	Franklin	601	19	67.1	+2.5	94	1	40	20†	38	3.43	−0.71	0.66	0	12	16	10	5	s.	L. H. Pomeroy.
Northfield	Washington	876	24	63.4	+0.5	88	1	40	31	36	4.46	+0.53	3.00	0	10	11	6	14	s.	U. S. Weather Bureau.
Wells	Rutland	750	19	67.3	+0.9	87	10	46	20	30	3.27	−1.86	1.17	0	9	11	14	6	s.	E. R. Pember.

[a], [b], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 4, Lake region.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota.																															
Cloquet	Lake	.28			.06			.67			.25					.05						.90					.60			.68		3.49
Duluth	do	.37		.03			T.	.83			.30				T.	T.		.02			T.	.71			T.		.31	.03	.01	.04	.37		3.02
Floodwood	do		1.08					1.00			.42					.01						1.01						.21			.33		4.06
Stephens Mine	do	.85			.02			1.09		1.03	.30				.20	.05	.08	.06	.21	.03		1.08				T.	.04	.12		.15	.09	5.40
Two Harbors	do	.60						1.00		.10	.55						.10		.70			.15					.70			.35	.20	4.45
Virginia	do	.52	.10		.03			1.19		.90	.32					.08	.06	.08	.16	T.		1.16				.02	.51	.10		.13	.18	5.54
Wisconsin.																															
Appleton	Fox	.40						.02			.97	.02			.30	.05	.10						.64				.02				.12	2.64
Ashland	Lake	.31					T.	1.07			.18								.08			.30					.23			.25	.03	2.45
Bayfield	do	.53			.05		T.	1.06			.21					T.	.40	.01	.20			.26					1.14			.39	.10	4.35
Cecil	Fox						1.55			.38							T.					T.	.80			T.		T.		T.		2.73
Florence	Menominee	.48						1.66														1.53					1.06	T.			.64	5.37
Fond du Lac	Fox	.35			T.		.06				.50	.04		T.	.40	.10		.07				.26								T.		1.78
Grand River Locks	do	.72					.36	.34			.27	.08	.04	.04	.34		.50					.27										2.96
Green Bay	Lake	.23					.09	.04			.43				.07		.01					.63									.06	1.56
Iron River	do	.16	T.	T.	T.	T.		.95		T.	.15	T.	T.	T.			.17		.07		.04		.40				.51		.35	.34		3.14
Kewaunee	do	.11					.90	.40				.42						.28				.33						T.				2.44
Manitowoc	do	.05									.62				1.94		.20					.40					.02	.05				3.28
Menasha	Fox							.02			.61				.45		.17					.49					T.			T.		1.74
Menominee Falls	Lake	.63			T.	T.					.04	.44	T.	.46	.45	.76	.16						.06					.67				3.67
Milwaukee	do	.85			T.	T.					.09	.03	.06	.31	.35		T.						.01				.18	.11			T.	1.99
New London	Fox	.40						1.12			1.10				.18		T.					.10								T.	.25	3.15
Oconto	Lake							.52			.15								10			.96				T.				T.		1.73
Oshkosh	Fox	.59					T.	.08			.60	.54			.07	.35	.05						.32									2.60
Pine River	do	.57			.01			.66			1.20	.01		T.	.34		.75						.90							T.	T.	4.44
Plum Island	Lake	.02						1.19								.03	1.01					.23	.95									3.43
Plymouth	do	.38					.32			T.	.42	.03			1.98	.22	.19	.53					.51								T.	4.81
Port Washington	do	.52										.22		.12	.18	.92	.03														.03	2.72
Racine	do	1.15				.05						1.52	.16	.47	.27	.66	.56						T.			T.						5.54
Ripon	Fox	.23					.06	.16			.65				.86		.65	.43					.31									3.35
Sheboygan	Lake	.23					.12	.08		T.	.04	.31			.03	3.03	.11	.08					.66								T.	4.88
Sturgeon Bay	do	.23						.63	T.		.22						.02		.23			T.	.63				T.	T.		T.	T.	1.96
Superior	do	.56	T.		.07			.78	.16		.04	.22			T.		T.				.01	.77	.04					.29		.07	.31	3.32
Waupaca	Fox							.77			1.32				.28		.03					1.13								.02		3.55
Illinois.																															
Chicago	Lake Michigan.	.26	T.			.01					.20	.56	.82	1.43	.16		.04	.03					.04	T.	.09			.08				3.72
Highland Park	do							.16			1.15		1.14		1.35	1.15			1.15													6.10
Indiana.																															
Auburn	Maumee			.15			.26							.35	.45	.43			T.							.37	.79					2.80
Berne	do	.19		.03	.64									.78	.73	.19			T.				T.	.16	1.84	.09		.21				4.86
Elkhart	St. Joseph	.17	.63									.12		.21	.18	.42			.03				.03		.90							2.69
Fort Wayne	Maumee	.51	T.	.01	.01		.14	.13						.53	.34		.04						.11	.02	1.00	T.		.07				2.91
Hammond	Lake Michigan.	.50									.08			1.65			.06						T.		.66							2.95
Howe	St. Joseph													.35	.48	.88	.12								.93			.06				2.82
South Bend	do	.07	1.57				.09					.08	.51	.61	.38	.06						.02	.62	.20								4.21
Whiting	Lake Michigan.	.60									.01	.50	1.11	.07		.07	.03						.04		.44							2.87
Upper Michigan.																															
Baraga	Lake	T.						T.			T.						T.											.04		T.		
Bergland	Ontonagon	.40			.50			1.85	T.		.25				T.			.15				.40				.35	.10			.45	.25	4.70
Blaney	Manistique																															
Calumet	Lake	.79	.08		.01			.67	.23		.22						.02		.02			T.	.04				.05	.15	.02		.02	.32	2.64
Chatham	do	1.24			.13			1.01	.07		.02				.06				.15		.06	.53	.01				.11		.02		.17	3.58
Deer Park	do							1.62			T.											T.					.20		T.	T.	T.	1.82
Detour	St. Marys	1.30						1.00														.50						.30				3.10
Eagle Harbor	Lake	.10			T.			.90		.45	.11	T.						T.		T.		T.					T.	.40	T.			2.26
Escanaba	do	.33			T.		T.	1.20			T.				.07		.45				T.	.90				T.	.20	.02	.02		.04	.29	3.52
Ewen	Ontonagon	.01			.17		.01	1.30			.20											.20	.10			.15	T.	.13	.03		.26		2.41
Grand Marais	Lake	.70			.03			1.00	.20	.08	.05										.05		T.				.01				T.	.03	2.29
Green	do	T.			.52			1.19	.01		.35											.55									.47	.15	3.25
Houghton	do	.07	.04		.02		T.	.80	.06	T.	.42	.01										.01				.08	.02	.22	T.		.29	.05	2.17
Humboldt	Escanaba	.25					.35				.10											.10					T.	.30	T.		T.		1.10
Iron Mountain	Menominee	1.24					.03	.68	.08		T.					.05		.17				.45	.20			2.53				.04	1.10	6.57
Iron River	do	.30			.10			1.10	.90		T.	T.				.20					T.	1.70				2.0	.35			1.15	.30	6.30
Ironwood	Lake				.17			.31			.23					.20	.17					.08				1.1	T.			.08	.23	1.59
Ishpeming	Escanaba	.70	.30		T.			.40	.30		.10				T.				T.			.15	T.			1.0	.50	T.		.10	.40	3.05
Isle Royale	Lake					.40					.18											.22				.80		.12		.52		2.24
Mackinac Island	do	.57						.59	1.12			.45	T.			T.	.14	.26				.60						.18		T.	T.	3.91
Maple Ridge	do	1.32						.82	.28								.48	.30				.81					.67	.10			.50	5.28
Marquette	do	.40			T.		T.	.55			.11					.17			T.		.03	.05				.10	.01	T.	T.	.14	.03	1.59
Menominee	Menominee							.58			T.					T.		.11	.19			.96								T.		1.84
Minising	Lake	.31						.99	.58		.02	.02				.04				.06		.02	.50	.01			.21		.01			.19	2.96
Newberry	Tequamenon	.14						1.32	.02								T.					.47	.12								.13	2.20
Powers	Lake																					T.	.48									1.51
St. Ignace	do	.50						T.	.45		T.	.08				T.						.51						.04			.02	2.39
Sault Ste. Marie	St. Marys	.59						.94	T.	.29	T.																.70	.12		.31		4.36
Thomaston	Lake	.05			.40			1.70			.60					.32	.16		T.								.18	.27	.02		.22	.27	3.65
Victoria	Ontonagon	.20	.01		.25			1.12	.03		.36		T.		.02	T.	.21		.02		.08	.39					.02	.17	.04		.19	.29	3.07
Watersmeet	do	.26			.02			.90	.07		.06	.02			.08				.33			.62										.09	2.52
Whitefish Point	do	1.00						.80	.17	.41	.02						.01						.01				.01						
Lower Michigan.																															
Adrian	Raisin													3.30			.05								.97							4.32
Allegan	Kalamazoo	.58			.17						.71	.17		.29	.51	.19	.09	T.					.11		T.			T.				2.82
Alma	Saginaw	.30								.20	T.	.22				1.03	T.											10				1.85
Alpena	Lake	.01		T.	.08		T.	.01			.02					.01	.34	.24	T.				11					40			T.	1.22
Ann Arbor	Huron	.36		T.			.62	T.				.21	.01	.07			T.	.39					.02	T.	.36							2.04
Arbela	Saginaw	.53			.04							1.44				1.26	.28						.56									4.11
Battle Creek	Kalamazoo	.20	.71							T.		.65	.20	.48	.36	T.	T.						.06		.48							3.14
Bay City	Saginaw	.30								.20						1.50	.40						.40					.10				2.90
Benzonia	Betsey																															
Berlin	Clinton	.81	.03	.42	.98	.62		.02				.20					.52	.09		.07			.15	.05	.12							4.14

TABLE 2.—*Daily precipitation for August, 1911. District No. 4*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Lower Michigan—Continued.																																	
Big Rapids	Muskegon	.38									.04	.25				.36	.08						.02						.24				1.37
Bloomingdale	Lake	.41			.04				.14			.87	.17	.33	.87	.53	.01					.02		.09		T.			T.			T.	3.48
Cadillac	Manistee	.20	.10				.20		.40		.40						.05						.10						.60				2.05
Cassopolis	St. Joseph													.30	.20								.06		.30								0.86
Charlevoix	Lake	.92			.52			.50	.52		.30						.42						.21						.30				3.69
Charlotte	Kalamazoo	.12										.20	.01	.05				1.60					T.		.25								2.23
Cheboygan	Cheboygan	.50			T.			.28	.82		T.					.80	.70						.28						.22				3.60
Clinton	Raisin	.75										.50		.12	.90			.11					.09		.43								2.90
Coldwater	St. Joseph	.10											.40	.50	1.77								.10		.53								3.42
Concord	Kalamazoo	.43										.38	.05	.12	3.10	.10	T.	T.					.12		.42								4.70
Croton	Muskegon	.25	.01		.07	T.			.14			.07				.08	.08	.04					.33						.20				1.27
Detroit	Detroit	.28	.01	.28	T.			T.				.21	T.	.01	.10	T.	.09		T.				.01		.32				T.				1.31
Durand	Saginaw																																
East Tawas	Lake	.10			.25		.35				.30					.40	.80												.12				2.32
Eloise	Rouge	.24		.15		.23	.24					.37		T.	.05			.19					T.	T.	.34	.01			T.				1.82
Flint	Saginaw	.20			.05	.10						1.10				.85	.20	.15	.18				.20										3.03
Frankfort	Betsey	.15									.40					.60						.30						.40			.20	2.05
Ganges	Lake	.50			.05				.17			.96	.09	.15	1.01	.38	.02						.04		T.				T.	.02			3.39
Gaylord	Cheboygan																																
Gladwin	Saginaw	1.10			.70							1.20				.90	1.40												.20				5.50
Grand Haven	Grand	.29			T.		T.				.05	.05	.01	.02	.50		.14						T.						.14				1.20
Grand Rapids	do	.86	.01		.19						T.	.07	T.	.02	.68		.32		.01				.04			T.			.09				2.29
Grape	Raisin	.58		.05	T.			.01					T.	.07	1.06			.12					.05	.01	.45	.01			.15				2.56
Grass Lake	Grand	.61										.34		.10	.35	.31		.06				.05		.42			T.						2.24
Grayling	Au Sable	.07				.05	.06					.40				.10	.26	.05	.05										.60				1.64
Harbor Beach	Lake	.12			.25	.35										.65	.95						.65										2.97
Harrison	Saginaw																																
Harrisville	Lake	.10	.14		T.		.04	T.	.10	.97	.10					.12	.80	.10					.02										2.49
Hart	Pentwater	.10										.25				.80													.80				1.95
Hayes	Pigeon	.65	.23	.03			.08	.30			.20					1.12	1.05							.25									3.91
Highland	Huron	.60										.25		.04	.03								.12	.07	.19								1.30
Hillsdale	St. Joseph	.65		.02								T.	.20	.42	2.01	.17								T.		.67							4.14
Holland	Lake	.30										.51	.05	.10	T.	.42	.13	.01					.05						.13				1.79
Howell	Saginaw	.33			.05							.30		T.	2.40	T.	.10	.15					.10										3.43
Ivan	Manistee	.18	.03				.10	.09		.40	.74					.05	.12		.07				.18						.55			.07	2.58
Jackson	Grand	.40				.02						.28	.05	.15	.50	.55		.04					.08		.37				T.				2.44
Jeddo	St. Clair	.30		T.	T.			T.				.30				.75	.27		T.				.15	.11									1.88
Kalamazoo	Kalamazoo	.10									.22	.36	.67	1.23								.10		.40									3.08
Lansing (Agr. Col.)	Grand	.30	.04									.14		.01	.04	.47	.18						.20		.10									1.48
Lansing (Capitol)	do	.11	.08								T.	.12		.03		.72	T.	.30					.20		.11		.02						1.69
Lapeer	Saginaw	.32		.06	.03	.04					.62					1.05	.05						.34										2.51
Ludington	Pere Marquette	.46									.72					1.35							.42						.32				3.27
Luther	Manistee	.73	.11						.07	T.	.50	.11				.97	.06	.01	.01				.07						.60				3.24
Mackinaw	Lake	.80						.35				.20					.15					.42						.15			T.	2.07
Mancelona	do	.20			.10			T.	T.		.04				T.		.30		.15				T.						.10			T.	0.89
Manistee	Manistee	.15							.03	1.40	.50					.50							.55					.32				.06	3.51
Midland	Saginaw	.50			T.											.20	.30						.10						T.				1.10
Morenci	Maumee												.21	.18	3.36			.01					.10		1.03								4.89
Mount Clemens	Clinton	.25		1.25	T.	T.						.35		T.	T.	.25	.25	T.					T.	1.25	.15	T.							3.75
Mount Pleasant	Saginaw												.13																				
Muskegon	Muskegon									.20		.05						.25															0.50
Old Mission	Lake	.67			.04			1.10	.62		.09					.02	.50		.35			.02					.40						3.81
Olivet	Kalamazoo	.72									T.	.30	.22	.38	.26	.20	.18	.25					.19		.20								2.90
Omer	Lake	.60									.40																		.20				1.20
Onaway	Cheboygan							.60																					.65				
Owosso	Saginaw	.29		.01		.10						1.60				.47		.10	.01			.36											2.94
Petoskey	Lake	.40			.10						.18					.02	.20					.02							.08			.07	1.21
Plymouth	Rouge			.50	T.		.50					1.00			.12									.50	.38								3.00
Pontiac	Clinton	.60	.12	.13								.23		T.									.50	.15	.19								1.92
Port Austin	Lake	.47	.22			.38		.02	.01			.21				.65	.82					.18											2 96
Port Huron	St. Clair	.09		.60				.01			.03	.23				.34	.75		.09				.04		.04				T.				2.22
Reed City	Muskegon	.30			T.							.50				.80		.10											.50				2.20
Roscommon	Au Sable	.72					.05		.45	.27		.10				.16	.10						.06						.64			.04	2.59
Saginaw	Saginaw	.10	.10				T.				T.	.55				.90	.90	.05					.15										2.75
Saginaw, West Side	do	.17	.10	T.				T.			T.	.25				1.27	.41						.16						T.				2.36
St. James	Lake	.30						.55	.45		.03	.08				.14	.31					.12	.75									.03	2.76
St. Joseph	St. Joseph		.12			T.						.22	.42	1.15	.04	.14	.02						T.		.12								2.23
Sandusky	Lake		.19	.02		.07		.03				.11				.52	.58						.16										1.68
Saranac	Grand											1.02		.03		.33	T.	1.73					.17										3.28
South Haven	Lake		.40						.20		.40	1.20	.60	.40	.20								T.	.40	.60								4.40
Stanton	Grand								.08					.08																			0.16
Thornville	Saginaw	.52		.30	.20							.30	.20			1.02	.20		.20				.40		.12								3.46
Traverse City	Lake	.57					.24									T.	T.						.27						T.				1.08
Vassar	do	.20		T.	.33							.53				.68	.13						.17										2.04
Wasepi	St. Joseph	.15	.45				.06	.44	.72	.80	.06	.06											.03		.55								3.32
West Branch	Lake	1.25									.25																						
Woodlawn	Au Sable	.55					.07		T.		.23					.98	.62	.05					.27						.72			T.	3.49
Ypsilanti	Lake	.22		.11	T.							.40		.10	.28		T.	.14					.02		.41	.05							1.73
Ohio.																																	
Akron ‖	Lake		.22	.23	.03		.01	T.	T.						1.45				T.					.03	.23	1.32	.04		.21	1.11		T.	4.88
Benton Ridge	Maumee	T.	.10	.22									T.	.80	T.	T.		T.						T.	1.20	.34			.93				3.59
Bowling Green	Lake	.14	T.	.85	T.								.32	T.	1.23			T.							.62	.26			.50				3.92
Bucyrus ‖	Sandusky			1.45	.25								T.	.65		.01			T.					.15	.25	1.20	.05		.50	.55			5.06
Cleveland (1)	Lake	.26	.86	.23				.10			T.		T.	.01	.15	T.	.01		T.					.01	.91	.21		T.	2.43				5.18
Cleveland (2)	do	.29	1.15	.29				.21						.16	T.	T.	T.		.04					T.	.75	.44		T.	2.75				6.08
Conneaut	do			.36	.31			.38	.15							1.34			.19						.21	.68		.38	.97				4.97
Defiance ‖	Maumee		.47	.02		T.						.32	.01	.18	T.		T.	T.					.08	.21	.97			T.	.23				2.49
Findlay ‖	do		.48	.79	.43	T.						.26	.15	.03	.03		T.	.02					T.	.72	1.01	.07		.06	.62				4.67
Fremont	Sandusky		.40	.48								T.	.08	.78									T.	.90				.89					3.53
Hedges	Maumee	.18			.07							.35	.30	.04										.88	.29			.50					2.61
Hillhouse	Lake		.40	.82	.05			.02	.11						.15	.30		.03	.13					.32	.70		.10	1.70	T.				4.83
Hiram	do		1.06	.13		T.	.60	T.					T.		.13	T.		T.	T.					.36	.69	.81		T.	1.24				5.02
Hudson	do		.25	1.25	.10			.25							.40				.20					.15	.80	.40		.10	1.75				5.65
Lima	Maumee	T.		.76	.08			T.					.44	.40										.05	1.80	.20			2.72				6.45
Medina	Lake		.56	.07		T.	.38	.03				.09		1.74	.05		T.	T.						.09	.78	.52		T.	2.42				6.73
Montpelier	Maumee	.19			.07							.47	1.47	.87		T.							T.		1.42								4.49
Napoleon	do	.11				T.						.33	.09	1.08				T.	.02				T.		.83	.22			.45				3.13
New Bremen	do		T.	.15	.71							.55	1.70	.03										T.	1.50				.60				5.24

TABLE 2.—*Daily precipitation for August, 1911. District No. 4*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***Ohio*—Continued.**																															
North Royalton	Lake		1.80	.05			.23	.05					.04		.63									.16	.85	.81			2.74				7.36
Norwalk ‖	do	.15	T.	1.40	.24			T.						.11	.85	.40									.38	1.25	.11		.43	.88			6.20
Oberlin	do	.10	.23	.27	T.		T.	.96	T.				.10	T.	3.12	.01								.03	1.10	.57	T.	T.	1.84				8.33
Ottawa	Maumee	T.	T.	.02									.15	.35				.04	T.						1.48	.38			.45				2.87
Sandusky	Lake		.60	.37				.38					.03	.42	2.10		T.	T.	T.				T.	T.	.80	.02			.59				5.31
Tiffin	Sandusky	T.	.43	.45	T.	T.	T.						.44	.02	.36	.01	T.	T.	T.					T.	1.32	.80	T.	T.	.61				4.44
Toledo (1)	Maumee	.38		.16	T.	T.		.01			T.	T.	.03	.37	1.52		.01		T.				T.		1.10	.05			.24				3.87
Upper Sandusky	Sandusky	.35	.55	.23				.10					.53	.19		T.								.31	1.03	.53			1.89				5.71
Vickery	Lake	.04	.31	.34				.09							.77										.63	.22			.54				2.94
Wauseon ‖	Maumee		.29	T.		.04	.03		T.				.02	.33	2.20			.01	.02					.22	.22	.72		.01	T.	T.			4.11
Willoughby ‖	Lake		.70	.15			.06								.28	.25			.10						.32	.53	.02	.45	1.09			.02	3.97
Pennsylvania.																															
Erie	Lake	.08	.23	.91		.02	.21	.13	T.			.17	T.		T.	1.46	.58		.08						.21	.72	T.	.13	.83				5.76
New York.																															
Adams Center	L. Ontario								.68			.04				.81	.12	.49	.10	.11				.14	T.	.12		T.	.65	.16	T.	T.	3.42
Angelica	Genesee		.03	.17	.31	.03	.83	.01	.02			.19				1.34			.55					.02	.12	.60	.01	.79	1.97	.11		.17	7.27
Appleton	L. Ontario		T.	.81	.04				.25			.06				.20			.12					.02		.21		.24	.26				2.21
Auburn	Oswego		T.		T.				.40			.22				.42			.48						T.	.62	.06	.02	1.50	.20			3.92
Avon	Genesee			.16	.14							.29				.31									.02	.55		.07	1.00			T.	2.54
Blue Mountain Lake	Raquette									.27			.35				.67	.73	.77							.65			1.47			.67	5.58
Brockport	L. Ontario		.44	.24	.20		.17		.08			.28				.16			.02					.01		.27		.03	.51	.06			2.47
Buffalo	Lake Erie	T.	.35	.98					.29			.17	T.			.50	.08		.09					T.	.03	.68		.38	1.06			T.	4.61
Canton	Grass		.06	.53			T.		.23	T.		.14				.47	.09	.03	.38					.21		.27	T.	T.	.29			T.	2.67
Cape Vincent	St. Lawrence			.03					.11			.08				.60	1.15	.10				.10						.30	.10				2.57
Carvers Falls	L. Champlain															.02		.23		.88									2.83	.57			4.53
Chazy	do															.27	.40		1.00					.25		T.	.28		.27				2.47
Dannemora	do						.06	.38				.26				.26	.20		.11	.68	.10			.07		T.	.20		.37	.11			2.80
Elba	L. Ontario		.28	.90	.60	T.	.50		.04			.40				.23		.05	.11							.33			.60	T.			4.01
Faust	Raquette																																
Fayetteville	Oswego								.25			.16				.36			.15	.22				T.	T.	.68	.06	T.	1.02	.20		T.	3.10
Gabriels	St. Regis			.37								.04			.29	.04		.03	1.02	.49				.05		.14	.10		.34	.10			3.01
Harkness	L. Champlain						.12					.02				.48			.10	.68				.12		.18	.22		.68				2.60
Hemlock Lake	Genesee		.56	.21			.05					T.				.75			.43								(*)	(*)	2.09				4.09
Horseshoe	St. Lawrence																																
Hunt	Genesee		.17	.42	.10											.65			.24							.94		.64	1.75				4.91
Ithaca	Oswego		.02	T.		T.	.38		.19			.07				.91	T.	.05	.13					T.	.12	.55	.01	T.	1.56	.16			4.15
Keene Valley	Ausable						.92	T.				.12				.09	.12		.14	.15						.09			.31				1.94
King Ferry	Oswego		.02				.02		T.			.16				.79			.32					T.	.03	.60	.09	T.	1.33				3.36
Lake George	L. Champlain						1.52		.04			.03				.16	.11	.23	.06	.11						.11	.25		1.88	.04		T.	4.54
Lake Placid Club	Ausable, W. Branch.			.13			T.					.09				.38		.34	.61	.08				.06		.34	.22		.73	.06			3.04
Le Roy	Genesee		.11	.31	.54		.04					.32				.23	.03	.13	.02						T.	.51		.40	.70	.03			3.37
Lockport	L. Ontario		T.	.82	.09		T.		.13			.49				.19		.15	.02					.01	T.	.31		.25	.40			T.	2.86
Lowville	Black		.58			T.	T.		.65	T.		.10					.43	.90	.30	.05				T.		T.		.20	.65			T.	3.86
Moira	St. Lawrence			2.39	.81	.68			T.			.26				.19			.67	.22				.17		.04	.20		.40	.21			6.24
Nehasane	Black							.01	.32	T.		.27				.01	.06	.60	.21	.37				.08		.28	.05	T.	.64	.10		T.	3.00
North Lake	do																																
Ogdensburg	St. Lawrence			.52					T.			.12				.20	.12		.50					.20		T.	T.	.82	.30				2.78
Old Forge	Black			.08			.20	.01	.30	.08		.29				.13	.04	.67	.15	.54				.02		.33	.08	.02	.70	.11			3.75
Oswego	L. Ontario		.08	T.	.65				.88			.03				.42			.07		.05			.04	T.	.13		.09	1.34			.13	3.86
Otto	Lake Erie			1.16	1.00	.02	.22	T.				.30			1.26		.20	.40						.07	.09	.77		.90	1.60	.16			5.20
Palermo	L. Ontario		.03	T.	.02				.84			.05				.06		.05	.08					.10		.06		.60	1.03	.19			3.11
Perry City	Oswego		.03						1.15			.16				.82			.12	.32					.13	.60	.16	.03	1.42	.21			5.15
Philadelphia	St. Lawrence			.09		.04		.07	.15			.09				.04	.14	.86	.13	.15				.11		.33	.26	.24	.42	.39		T.	3.51
Potsdam ‖	Raquette			.21	.10	.03				.20		.17					.45	.15		1.22				.18			.40			1.15			4.26
Raquette Lake	do				.58	.07			.23			.43				T.	.14		.74	.06					.38	.14		.92	.06				3.75
Rochester	Genesee		.18	.33	.02		T.		.02			.27				.15			.01					.01	T.	.30		2.30	.70			T.	4.29
Romulus	Oswego																																
Scottsville	do			.10	.14							.43				.23			.17							.53			.99				2.59
Shortsville	do		1.18	T.	.07							.28				.76			T.						T.	.47		.03	.99	.11		.05	3.94
Skaneateles	do		T.	T.	T.		T.		.66		T.	.15				.41			.45				T.			.65	.06	.02	1.03	.26	T.	T.	3.69
Syracuse	do				T.	T.			.06			.10				.30		.02	.09					.01	T.	.48	.04	T.	1.33	.02		T.	2.45
Ticonderoga	L. Champlain											.11				T.	.08	.02		.07			T.			.02	.08		.70	.01			1.09
Tupper Lake	Raquette			.25	T.				.02			.09				.33		.06		.58				.08		.10	.12		.45	.12		.20	2.28
Volusia	Lake Erie	.15	T.	.72								.40				2.14	T.	.56	.16					.04	T.	.56		.52	.95	.14			6.34
Wanakena	Oswegatchie			.02				.02	.02			.03				.08	.06	.19	.22	.32				.10		.12	.11		.75	.11			2.15
Wards Creek	Raquette																																
Watertown	Black			.10	.10		.17		.28			T.				.20	.28	1.52	.27	T.				.11		.18	.05		.77	.12			4.15
Wedgewood	Oswego		T.						.23			.05				1.69		.03	.13					.11	.13	.71	.03	.01	1.80	.22			5.03
Westfield	Lake Erie	.33	.31	.51	T.		T.					.34				1.14	.12	.33	.17					.12	.21	.31		.29	.45				4.63
Youngstown	L. Ontario			.89												.30										.15			.23				1.57
Vermont.																																	
Burlington	Champlain						T.					.06				1.06	.02	T.	1.54	.09				.03		.43	.02		.57	.01		T.	3.83
Cornwall	do						.55					.35				.30		.10	.10		.30		.03			T.	.05		1.90				3.68
Enosburg Falls	do	.02					.28					.28			T.	.66	.34		.04	.60				.11		.01	.59		.22	.28			3.43
Northfield	do						T.	T.				.66				.19	.04		.33	.10	T.			T.		.02	.11		2.97	.03		.01	4.46
Wells	do						T.					.12					.19	.06	.14	.38						.12	.14		.95	1.17			3.27

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 4, Lake region.*

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Upper Michigan.										Lower Michigan.					
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie.		Alpena.		Battle Creek.		Cadillac.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	63	52	76	60	78	61	82	59	84	65	80	69	71	61	83	52	73	57	79	58	78	63	74	65	85	67	76	68
2	75	52	71	52	72	55	75	61	71	66	80	66	69	54	73	57	70	53	68	54	74	55	78	60	79	64	73	61
3	66	51	74	47	70	54	70	58	75	65	84	63	68	54	78	45	70	53	64	54	75	52	73	56	85	58	76	56
4	60	51	78	54	83	60	80	63	88	70	84	67	71	63	76	45	69	53	74	55	80	60	74	60	86	63	79	60
5	76	54	80	56	83	62	8	68	80	70	88	70	76	60	77	50	74	56	82	61	83	60	84	61	91	63	85	64
6	72	58	78	54	81	64	78	68	81	71	92	67	78	59	79	56	79	56	72	60	78	57	77	60	93	64	87	69
7	64	52	76	61	85	66	90	65	92	74	87	70	71	64	76	55	65	52	70	57	76	62	73	62	90	67	88	64
8	74	55	78	58	81	62	83	64	78	69	84	66	77	60	77	50	76	55	75	59	65	57	74	61	87	67	80	62
9	73	58	76	62	85	65	89	61	90	70	91	62	81	62	78	45	72	57	74	56	72	52	90	56	91	56	83	57
10	60	50	66	49	66	57	79	58	89	69	97	66	68	55	57	50	60	51	62	52	68	49	69	54	93	61	72	60
11	68	50	74	49	72	54	67	58	72	64	85	66	72	51	72	50	74	51	67	50	69	51	75	55	87	63	74	57
12	69	53	76	47	77	59	69	63	75	65	77	60	70	57	75	44	77	50	78	53	75	45	72	48	71	57	79	55
13	73	57	83	50	82	58	69	63	74	68	85	68	72	57	80	52	81	59	86	63	81	48	78	52	73	60	81	57
14	80	60	79	58	77	61	82	64	90	72	89	69	72	62	75	60	82	63	82	65	83	57	82	57	86	65	86	58
15	85	64	86	60	90	63	83	67	77	69	84	68	77	62	74	58	85	68	78	62	71	61	85	63	86	62	84	63
16	81	60	79	62	84	66	89	70	92	72	90	62	76	63	85	55	76	60	72	63	77	58	79	63	85	65	86	67
17	74	52	74	55	80	62	86	66	80	73	83	68	78	58	77	52	69	57	70	62	71	56	82	58	84	63	80	58
18	67	50	69	51	72	55	72	63	75	68	80	61	68	50	70	58	65	54	63	53	63	54	72	54	80	61	72	55
19	76	54	73	39	74	52	70	59	70	66	73	54	69	49	75	39	71	50	67	52	66	50	72	48	75	49	71	46
20	84	58	80	50	80	55	75	58	73	62	77	53	73	53	72	46	77	59	73	59	75	46	75	49	86	50	70	48
21	74	51	74	58	82	62	82	60	84	65	82	55	72	62	71	48	70	59	72	58	75	58	79	55	81	52	79	47
22	65	44	65	47	66	54	72	58	72	63	79	59	64	51	70	46	61	53	63	52	64	53	70	53	79	58	74	56
23	69	44	68	40	71	49	68	54	66	62	63	59	68	46	73	48	66	48	64	49	63	46	70	46	71	55	69	43
24	69	50	81	39	72	52	70	59	65	59	62	54	66	48	70	42	71	53	73	52	73	41	70	44	66	54	73	42
25	75	48	.....	.....	74	53	69	56	68	61	70	56	68	54	74	39	76	57	76	58	70	48	69	50	73	54	72	52
26	60	50	76	52	80	58	74	60	74	62	76	54	70	55	72	42	68	55	77	56	77	52	73	51	78	59	80	57
27	61	48	76	55	80	60	84	61	85	65	84	65	80	59	70	52	71	57	80	57	79	57	74	61	82	61	82	63
28	63	44	59	47	64	50	70	54	76	62	73	54	63	46	58	42	57	49	60	47	62	50	71	51	73	60	80	57
29	61	42	63	37	64	45	65	50	64	60	67	49	60	43	66	55	61	44	55	45	56	44	61	44	70	45	63	43
30	56	49	62	41	67	47	66	59	67	59	71	47	61	51	56	40	62	47	61	45	64	40	64	40	72	41	69	44
31	79	47	74	50	79	54	75	60	80	60	78	52	72	57	.....	.....	70	53	74	52	63	52	68	55	79	50	73	53
Mns..	70.1	51.9	74.1[a]	51.3[a]	76.5	57.3	76.2	60.9	77.6	66.0	80.5	61.3	71.0	55.7	73.0[a]	48.4[a]	70.9	54.5	71.3	55.5	71.8	52.7	74.4	54.6	81.2	58.5	77.3	56.2

Date.	Lower Michigan.						Ohio.								Erie, Pa.		New York.								Vermont.			
	Detroit.		Muskegon.		Saginaw West Side.		Cleveland.		Lima.		Sandusky.		Toledo.				Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	84	68	78	70	84	69	88	69	82	67	88	68	82	69	90	72	92	75	93	72	94	71	89	69	92	63	88	55
2	83	69	75	64	83	66	81	67	77	64	83	69	85	69	86	71	86	70	89	69	88	73	89	72	92	67	83	60
3	73	67	77	58	82	61	79	68	83	66	76	67	74	66	79	70	83	70	85	68	85	71	80	72	86	68	76	60
4	84	65	78	62	87	59	81	67	82	66	86	63	86	66	82	70	83	70	89	70	87	71	84	72	87	66	80	59
5	89	70	84	64	93	63	82	68	86	63	84	68	90	68	82	69	87	70	86	67	86	70	84	71	89	63	84	56
6	88	69	85	60	95	65	86	70	89	60	87	69	89	69	85	67	88	71	89	61	89	69	87	63	85	68	84	58
7	89	71	88	67	92	64	89	69	89	67	88	69	90	71	87	69	90	68	90	58	89	66	88	64	89	65	85	61
8	84	69	82	67	81	67	81	70	88	71	88	73	87	70	81	70	82	68	87	70	90	70	86	72	89	71	82	61
9	85	64	84	58	92	56	76	67	85	58	80	69	89	65	80	67	76	62	81	65	81	63	78	64	85	65	83	58
10	90	66	86	64	87	63	91	69	96	65	93	69	94	71	89	68	88	71	83	64	84	66	8	64	87	62	87	54
11	73	60	80	62	74	61	84	68	89	65	82	69	77	66	79	64	78	61	69	56	76	61	76	56	67	52	67	48
12	73	60	82	61	78	56	74	65	80	63	73	66	74	65	73	60	74	57	79	51	78	53	77	54	78	50	75	44
13	80	65	78	60	82	57	74	65	77	68	78	67	78	68	76	63	77	58	82	56	77	56	78	55	84	50	80	44
14	81	68	82	62	88	60	82	65	88	68	82	68	88	67	78	65	80	61	85	59	83	58	84	57	84	59	82	49
15	84	70	78	68	87	67	77	72	75	71	82	72	84	72	74	67	77	68	77	60	77	66	76	61	85	62	83	54
16	89	67	80	70	89	64	89	70	89	62	91	67	90	68	80	64	74	63	75	59	79	63	76	64	74	61	71	51
17	84	67	80	70	84	62	78	70	87	74	78	71	82	72	76	68	76	67	78	58	82	66	79	67	79	56	79	51
18	78	62	76	62	80	60	73	66	77	61	77	66	78	63	72	59	72	59	76	56	74	60	74	56	75	56	76	51
19	72	56	82	54	78	47	68	63	77	54	72	62	73	56	70	62	69	56	71	52	72	55	67	57	70	56	66	49
20	74	59	80	55	80	48	68	53	70	48	71	56	79	59	70	54	70	55	73	47	72	50	70	52	72	49	70	42
21	78	57	80	52	83	55	74	54	78	51	75	56	81	59	73	53	79	60	77	51	81	53	79	53	79	50	77	41
22	85	61	76	64	72	62	86	61	86	55	89	63	85	62	83	64	79	68	82	60	86	64	86	64	82	61	81	47
23	71	57	79	50	73	48	70	64	73	64	71	65	71	59	70	63	71	59	72	49	71	59	72	58	69	52	66	47
24	52	54	70	55	71	56	66	59	65	57	68	60	65	55	64	59	66	58	72	48	69	56	68	56	73	47	71	43
25	73	58	70	48	72	49	67	62	67	58	69	61	72	57	67	60	67	58	66	49	67	58	66	56	66	54	61	51
26	77	59	80	50	82	49	71	58	74	54	73	56	75	59	72	58	76	56	78	58	78	62	76	62	74	58	71	56
27	82	64	80	60	85	59	80	65	83	62	81	65	84	64	84	68	83	64	85	54	83	62	82	62	79	57	68	56
28	77	58	72	60	76	60	71	65	78	66	72	65	72	56	73	65	74	62	77	63	73	62	75	64	74	67	68	61
29	66	50	68	57	67	43	65	58	69	49	67	58	66	50	65	54	62	54	58	52	63	57	64	53	68	55	67	47
30	66	48	74	48	75	44	68	55	70	48	67	57	65	49	66	53	63	49	63	39	62	53	63	48	60	48	62	43
31	72	56	75	55	75	51	68	54	75	53	71	57	74	58	69	54	71	50	69	41	70	52	61	50	65	47	59	40
Mns..	78.9	62.4	78.7	59.9	81.5	57.8	77.0	64.4	80.1	61.2	78.8	64.9	80.0	63.5	76.6	63.5	77.2	62.5	78.7	57.2	78.9	61.8	77.5	61.1	78.6	58.3	75.2	51.5

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
‡ Data are from standard instruments not supplied by the U. S. Weather Bureau.
‡‡ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.

GEO. M. CHAPPEL, *District Editor.*

GENERAL SUMMARY.

The most notable features of the weather in the upper Mississippi Valley during August, 1911, were the heavy rains and the number of severe local electrical, wind, rain, and hail storms that obtained in northern Illinois, southwestern Wisconsin, northeastern Iowa, Minnesota, and North Dakota, and the continuance of the drought that had prevailed since May over northeastern Missouri and the western and southern portions of Iowa within climatological district No. 5. The rainfall was excessively heavy in the portions of Illinois, Wisconsin, Iowa, and Minnesota mentioned above, and in some localities it was unprecedented, especially in southeastern Minnesota, where nearly as much rain fell during the 14 days ended August 13 as was recorded during the whole of the year 1910. The electrical, wind, and hail storms were frequent and destructive. In fact, there were more damaging storms in the sections under discussion than were ever before recorded during the month of August, and the value of the property destroyed by wind, hail, lightning, and floods probably exceeded all previous records for that month. The most of the rain and the warmest weather came, however, during the first half of the month; the latter half being moderately cool and pleasant made the monthly averages for temperature and rainfall very nearly normal. The warmest days were the 10th, 14th, 15th, and 16th, when temperatures in excess of 100° were recorded on one or more days in southern Iowa, Missouri, and southern Illinois, with maximum temperatures considerably above 90° in other sections. A cool wave passed over the district between the 28th and 30th, which caused light frost on the 28th and 29th as far south as central Iowa and light to killing frost with freezing temperatures in some localities in North Dakota, Minnesota, and Wisconsin. While there were one or two moderately heavy showers early in the month, in western and southern Iowa and northeastern Missouri that gave some relief from the droughty conditions, the latter half of the month was generally dry, and at the close of the month the drought in those sections was about as severe as at any time during the summer. Pastures were bare and water for stock was in many localities very scarce, and many farmers were compelled to drive their cattle several miles to water and feed them hay or green corn.

TEMPERATURE.

The temperature was below the normal in all sections of the district, the deficiencies being due more to moderately cool nights than to any unusually low day temperatures. The maximum temperatures were, however, in no case excessively high for the season, nor were the minimum temperatures exceptionally low, as it is not unusual for frost to occur in northern Iowa and freezing temperatures in the extreme northern part of the district during the last decade of August. The warmest periods of the month were on the 10th and from the 13th to the 16th; and the coolest days were the 28th and 29th, when freezing temperatures occurred in some localities in North Dakota, Minnesota, and Wisconsin. The monthly mean temperature for the district, as shown by the records of 288 stations, is 68.2°, which is 1.2° below the normal. The highest monthly mean was 78° at Carbondale, Ill., and the lowest, 59°, at Pratt, N. Dak. The highest temperature reported was 106°, at Steffenville, Mo., on the 10th, and the lowest, 26°, at Prentice, Wis., on the 29th.

PRECIPITATION.

The average rainfall for the district is 0.41 inch above the normal for August, but that by no means gives an accurate idea of the conditions that obtained at any point over the upper Mississippi Valley during the month, as one station in southern Minnesota had nearly as much rain during the 14 days ended August 13 as was recorded during the whole of the year 1910; while several counties in southern Iowa had less than 1 inch, and at one station in that State only 0.45 inch was recorded during the month. The rainfall was very unevenly distributed geographically, but was generally well distributed during the month, except in southern Iowa, Missouri, and southern Illinois, where droughty conditions still prevail. Most of the rainfall came, however, during the first half of the month. All of the rainfall came in the form of local showers, some of which gave torrential downpours, and many of them were accompanied by severe electrical, wind, and hail storms, which did much damage to crops, buildings, and other property. The heaviest rainfall and the most damaging storms occurred over northeastern Iowa, northern Illinois, southwestern Wisconsin, southeastern Minnesota, and north-central North Dakota.

The average amounts for the several States in the district and the departures from the normal are as follows: North Dakota, 3.87 inches, +1.19 inches; Minnesota, 4.29, +0.99; South Dakota, 3.08, +0.27; Wisconsin, 4.19, +0.68; Iowa, 3.51, −0.47; Missouri, 2.68, −0.31; Indiana, 3.19, −0.66; Illinois, 4.44, +1.19 inches.

The average precipitation for the district, as shown by the records of 319 stations, is 4.01 inches, which is 0.41 inch above the normal. The greatest amount, 13.34 inches, occurred at Grand Meadow, Minn., and the least, 0.45 inch, at Fairfield, Iowa. The greatest amount in any 24 consecutive hours, 6.41 inches, occurred at Grand Meadow, Minn., on the 12th–13th. Measurable precipitation occurred on an average of 10 days.

SUNSHINE AND CLOUDINESS.

The average number of clear days was 14; partly cloudy, 10; cloudy, 7. The duration of sunshine was generally above the normal, notwithstanding the fact

that there was an excess of precipitation over the larger part of the district.

WIND.

The prevailing direction of the wind was from the northwest in the northern part of the district, and from the southeast and southwest in the southern part.

RIVERS.

Heavy rains in southeastern Minnesota, southwestern Wisconsin, northwestern Illinois, and northeastern Iowa, during the first half of the month, caused a decided rise in the stage of the rivers in those sections. Mr. James H. Spencer, local forecaster, Dubuque, Iowa, reports:

The heavy rains raised the Mississippi River at Prairie du Chien, Wis., from 0.6 foot on the 1st to 4.3 feet on the 18th, after which date it fell steadily to 1 foot on the 31st. At Dubuque the river rose from 1.1 feet on the 1st to 5 feet on the 15th, after which date it fell steadily to 1.7 feet on the 31st. From Dubuque to La Crosse, Wis., the Mississippi ranged considerably higher than during August, 1910, and there was sufficient water for navigation during the entire month. The Wisconsin River was decidedly higher than during August, 1910. The flood on the upper Iowa River was one of the worst on record, and the damage amounted to thousands of dollars. It was a double rise, the first occurring on the 13th, from heavy rains throughout the valley, and the second on the 14th, from exceptionally heavy rains at and near Le Roy, Minn. The Decorah, Iowa, Republican states that "Bridges, houses, barns, farm animals, and grain are wrecked, burned, killed, or washed away," as a result of the storm and flood; it also reports that the river at Decorah was the highest in 40 years. The postmaster at New Albion, Iowa, writes: "The flood on the upper Iowa River was within 6 inches of the highest watermark known. Crops are damaged through the valley very materially. The outlook before the flood for corn and hay was never better; now there is no hay to cut, and corn will be reduced 50 per cent, and possibly more. No lives were lost, but horses, cattle, and hogs were swept down the stream. One bridge, 10 miles from here, was washed away.

Mr. J. M. Sherier, local forecaster, in charge of the Davenport River district, reports:

The crest of the rise passed Clinton and Davenport on the 14th, and Muscatine on the 15th, when the gauge readings were from 5.4 feet to 5.6 feet higher than those recorded during the first few days of August. The highest stages recorded were as follows: Davenport, 6.1 feet; Clinton, 6.3 feet; Muscatine, 7 feet. The river fell rapidly after the passage of the crest of the rise, and at the close of the month the stream was again so low that navigation of the Le Claire Rapids was extremely difficult.

The Des Moines River, at Des Moines, Iowa, showed but little variation during the month; the stage was 1.4 feet from the 1st to the 5th; 1.6 feet from the 6th to the 12th; and 1.5 feet from the 13th to the 31st. The flow of the upper Illinois River was about normal.

SEVERE LOCAL STORMS.

There were more severe electrical, wind, and heavy rainstorms during the month than are usual in August.

A severe storm passed from west to east over western Bottineau County, N. Dak., which resulted in the death of three persons, and many thousand dollars' worth of property was destroyed. Another storm passed over Divide County, which resulted in the death of two men, and the destruction of much property. Unusually violent thunderstorms occurred at Worthington, Nobles County, Minn., on the 10th, destroying a number of head of live stock, a barn, and several grain stacks, with a total loss of over $1,500. The courthouse was struck by lightning and severely damaged. At Benson, Swift County, Minn., two people were killed by a small tornado on the 13th, and considerable property destroyed in that vicinity. At Grand Meadow, Mower County, Minn., on the night of the 12th–13th, a terrific thunderstorm prevailed all night, attended by destructive lightning and rainfall. Mr. C. F. Greening, cooperative observer at that place, reports under date of August 13:

The heaviest 12-hour rainfall in 40 years began at 9.30 p. m. on the 12th and ended at 8.30 a. m. on the 13th, during which time 6.41 inches of rain fell. A terrific thunderstorm prevailed all night. The railroad track was washed out and the country flooded. The Chicago Great Western depot at Racine and a house in Spring Valley were struck by lightning and burned. Deer Creek, near this village, was dry a week ago, but is one-half mile wide this morning, and hundreds of shocks of wheat, oats, flax, rye, and timothy were washed away, fences were torn out and are hanging by the wires. Many stacks of grain are standing in several feet of water. The damage is great, as not half of the stacking has been done yet. The total rainfall for the past 14 days—July 31 to August 13—is 15.26 inches. The total rainfall for 1910 at this station was 16.91 inches, or only 1.65 inches more than for the last 14 days.

The official in charge, local office, United States Weather Bureau, Dubuque, Iowa, reports:

No August in 60 years or more has produced such severe local thunderstorms in this vicinity as the past month. That of 10th–11th was the heaviest at Dubuque. The first thunder was heard at 5.12 p. m., when the sky was only about one-half overcast. The sky, particularly the northern half, was so black and threatening at 6.45 p. m. that buildings a block away could hardly be seen. From 6.30 p. m. to 10 p. m. very heavy thunder and exceedingly vivid lightning occurred at intervals. It is probable that such a long period of exceptionally severe thunder and lightning has seldom or never been experienced at this station. The storm did not end until the morning of the 11th. Lightning struck several buildings, but the damage in all cases was slight. The total rainfall during this storm was 3.64 inches. It is the heaviest 24-hour rainfall ever recorded here in August. Rainfall was nearly continuous during the entire night. In many cases cellars were flooded, and there were numerous and severe washouts on the railroads entering Dubuque. Telegraph and telephone companies suffered severely as the result of lightning, rain, and wind. All Western Union and Postal wires to Chicago were down and 2 or 3 days were required for complete recovery. Hundreds of telephones were put out of commission. The Mississippi River at Dubuque rose 1.7 feet during the storm. Considerable damage was done to corn, some of which was beaten down by wind and rain. Severe local storms were common throughout northeastern Iowa from the 9th to the 16th.

Mr. Clarence J. Root, section director, Springfield, Ill., reports as follows in regard to severe local storms in Illinois:

A series of thunderstorms occurred from the 7th to the 12th. The storms of the evening of the 10th seemed to be the worst in the northern counties, while the severe storms in the central part of the State occurred on the 7th. On the evening of the 10th severe and damaging thunderstorms occurred throughout the two northern tiers of counties. It is impossible with the scattered reports received at this office to properly describe the extent and damage from these storms. The amounts stated in the reports received at this office aggregate $75,000, so it is safe to conservatively estimate the total loss in northern Illinois at several hundred thousand dollars. While there was considerable loss from flood and wind the greatest damage resulted from lightning.

Stephenson County: Severe electrical storms raged from the evening of the 10th to the morning of the 11th and also on the 12th. These storms caused 25 to 30 fires, resulting in loss of grain, stock, and buildings. Trees and chimneys were blown down, many buildings were struck by lightning, and a number were burned, including several grain elevators. Some animals were killed by lightning in the fields. Old residents state that it was the worst storm in years.

Carroll County: Mr. M. N. Wertz, cooperative observer at Lanark, reports an unusually severe storm in that vicinity on the 10th-11th. The wind uprooted trees, tore down signs, and littered the ground with limbs. The lightning was unusually severe. Mr. Wertz says, in part, "From 7.45 p. m. August 10, to 5 a. m. August 11, 5.01 inches of rain fell, being the greatest rainfall in that length of time ever recorded at this station. The electrical display was something grand, as there was a continuous display of lightning, and it was one of the grandest sights I ever witnessed, from 8 p. m. to midnight." The Waukarusa River rose rapidly, cellars were flooded, and some poultry and hogs were drowned. The Chicago, Milwaukee & St. Paul tracks were washed out in several places, and telephone lines were put out of commission. So many fires from lightning were never before known in one month.

McHenry County: Mr. John West James, cooperative observer at Riley, says: "During the thunderstorm of the evening of the 10th nearly a dozen buildings were struck and burned in the vicinity; damage estimated, $25,000. No lives lost, but considerable stock was

killed in the fields." Electric interurban lines suffered from washouts and wire trouble.

Kane County: During the storm of the 19th buildings were struck by lightning in Aurora, St. Charles, and Elgin. Some fires resulted, including a $40,000 loss to the Elgin Academy. A second storm at Aurora on the 15th caused more damage from lightning and fire. Considerable stock was killed throughout the county by lightning and barn fires. Electric railways and telephone lines suffered.

In central Illinois the worst storms occurred on the 7th and 9th.

Storms of the 7th: At Chandlerville, in Mason County, two lumbermen sleeping in a tent were killed by a falling tree. In Macoupin County much damage was caused by wind and lightning. Many animals were killed, farm buildings were damaged or destroyed, and the corn crop was injured. The interurban wires were broken by falling limbs. At Pana and Edinburg lightning struck barns and caused fires, with loss of grain and stock. A severe storm at Litchfield damaged trees, wires, and buildings. In the vicinity of Springfield a house and barn were struck by lightning, the barn being destroyed. Considerable damage resulted to traction, telegraph, and telephone lines and heavily laden fruit trees. At White Hall much damage resulted from wind; buildings, trees, cornfields, gardens, and orchards all suffering. A 4-year old child, living at Jerseyville, was killed by a live wire, and several persons were more or less injured in the path of the storm through Green and Macoupin Counties.

A storm on August 9 caused damage from wind and lightning in Sangamon, McLean, and Macon Counties. Telephone wires were all down in the vicinity of Springfield. Mr. S. P. Peterson, observer in charge at La Salle, Ill., writes: "During the night of the 11th and 12th a very severe thunderstorm occurred. Many buildings in this vicinity were struck by lightning and a few were burned to the ground. The heavy rainfall attending this storm, 2.22 inches, washed out a portion of the Rock Island tracks near Marquette, Ill., causing a wreck."

REPORT OF SEVERE LOCAL STORM, GALENA, ILL., ON AUGUST 16, 1911.

[By J. H. SPENCER, Local Forecaster, United States Weather Bureau, Dubuque, Iowa.]

This local storm was one of the severest ever recorded in this immediate section of the country, and it seems almost a miracle that no one was killed. The storm clouds were low and black, and moved swiftly. Observers in the path of the storm who saw it approaching say that buildings and other objects seemed enveloped in black smoke, and that the appearance of the storm in general was terrifying. The storm entered the city at its western outskirts about 4.30 p. m., and it was severe only for a few minutes—perhaps 10. It came from a west-northwest direction, and passed over the southern section of the city. Its path was about one-half mile wide and perhaps 2 miles long. It did not do much damage until it reached the river, when, according to some observers, it united with another storm of less severity that was moving down the Galena River Valley from the northeast. The storm then moved forward with increased force. and for a distance of nearly 2,000 feet it was destructive. No funnel-shaped cloud was visible, and trees in Grant Park and elsewhere were laid down in the same direction as the storm was traveling. A number of windows and doors were blown inward, but none outward. Roofs, barns, sheds, branches from trees, etc., were carried slightly south of east as a rule.

At the Grant Memorial Home, however, there was some evidence of rotary motion. A large section of the massive roof of this brick building was taken off by the wind and carried through large trees for a distance of 175 to 200 feet; it was about 30 feet wide by 40 feet long and weighed many tons. Part of it was blown nearly northeast, where it struck and practically destroyed the frame McCarthy dwelling, in which several persons were living at the time; no one was seriously injured. Another section of the roof, comprising the tin and some timbers, was carried slightly south of east across the street into a yard, where it demolished a fence, several trees, and barely missed a dwelling. A third and smaller section struck the Avery house, the roof of which was damaged, either from this cause or by the wind. The Avery home is midway between the McCarthy home and the yard referred to. The writer saw timbers from the Grant roof that were 16 feet long and 4 by 8 inches or 8 by 8 inches; there were several of them, and none landed less than 175 feet from the building.

A 30 by 70 foot section of the roof of the Illinois Central freight house was blown off. Several windows and doors of this brick building were blown inward, and the walls were cracked in several places. A 16-foot board from the freight house was taken through the air for a distance of 500 to 600 feet and dashed into the shingle roof of the town hall.

On the other side of the river the chimneys and roof of the Burlington Hotel were damaged; the air dome, a large tent, was blown over and badly torn; and a portion of the brick walls of a blacksmith shop was blown over.

Telephone and telegraph companies suffered much loss. Scores of poles and quantities of wire were blown down.

A few large and sound trees were uprooted. In Grant Park one elm 15 inches in diameter was forced halfway to the ground, several box elders and catalpas were uprooted, and severe damage was done to many other trees. At 702 Park Avenue a box elder 23 years old and 6 feet in circumference was uprooted and thrown to the ground. Hundreds of trees throughout the area covered by the storm suffered severe damage. After the storm, Spring Street, in particular, was practically impassable to teams, owing to fallen trees, poles, etc.

There was heavy rainfall, but it was of brief duration. Hail fell during the storm, but the stones were too small to cause damage. The lightning was severe, and it struck the Meller residence on Hill Street, causing damage to the extent of $150.

The total loss from the storm is estimated at not less than $5,000.

ENGINEERING NOTES.

[Work being done in Iowa by United States and Iowa Geological Surveys.]

Mr. Robert Follansbee, district engineer, water resources branch, United States Geological Survey, St. Paul, Minn., has kindly furnished the following, relative to work being done in Iowa by the Iowa Geological Survey, in cooperation with the United States Geological Survey, in connection with the conservation and development of the water-power possibilities in that State:

The Iowa Geological Survey, under the directorship of Prof. Geo. F. Kay, of Iowa City, has recently entered into cooperation with the United States Geological Survey for the purpose of studying the flow of the more important rivers in the State. Prior to 1906 a number of stations were maintained by the United States Geological Survey, but with one exception they were discontinued in that year for lack of funds. Within the past year or two, water-power possibilities have aroused interest in Iowa and the State survey has been anxious to prepare a report on this subject. Preliminary investigations, however, showed the need for actual records of river discharge before a definite report could be made and so this has been postponed for some time, pending the compilation of stream-flow data. As a result, the following stations have been established: Iowa River, near Iowa Falls; Des Moines, near Fort Dodge; Des Moines, at Keosauqua; Cedar, at Cedar Rapids; Wapsipinicon, at Stone City. The last three stations were orginally established by the United States Geological Survey prior to 1906 and records of varying length are available for them. For the Cedar and Wapsipinicon, the records have been continued uninterruptedly since 1903.

Not only will the records of the Iowa Rivers be of value for water-power purposes but also for flood prevention, as the river valleys are subject to severe overflow. Also the subject of the pollution of the streams by sewage is becoming increasingly important and in this connection the low-water records are valuable in indicating the allowable degree of pollution of the streams.

INTERIOR TEMPERATURES IN LARGE MASSES OF CONCRETE DURING TIME OF SETTING.

[By W. D. MAXWELL, Assistant City Engineer, Des Moines, Iowa.]

The following data show the changes in temperature in the interior of large masses of concrete during the time of setting and the temperature of the air. The observations were made at intervals from November, 1910, to August, 1911, and at times during the erection of the piers and abutments of the new Walnut Street Bridge at Des Moines, Iowa. The instruments used were tested Fahrenheit thermometers, and the inside readings were made from 5 feet to 10 feet below the top of and 3.5 feet to 6 feet back from the face of the concrete, the thermometers being placed in pipes within the concrete. The cement used was the Hawkeye brand, made by the Iowa Portland Cement Co., and was up to the standard requirements, the concrete being composed of 1 part cement, 3 parts sand, and 6 parts broken stone. A summary of the readings shows that the temperature increases 15° to 20° within the mass during the time of setting of the concrete, and the maximum is attained from 7 to 10 days after the concrete is poured, after which the temperature begins to fall, the rate of decrease depending on the outside temperature of the air.

East abutment.

Date.	Time.	Temperature.		Date.	Time.	Temperature.	
		Concrete.	Air.			Concrete.	Air.
1911.		°	°	1911		°	°
Aug. 1	9 a. m.	70	75	Aug. 7	6 p. m.	[1] 88	86
1	6 p. m.	[1] 72	70	7	10 p. m.	[1] 88	70
1	9 p. m.	[1] 72	66	8	8 a. m.	[1] 88	72
1	12 mid.	[1] 72	62	8	12 m.	[1] 88	80
2	3 a. m.	[1] 72	58	8	6 p. m.	[1] 88	81
2	6 a. m.	[1] 72	56	9	7 a. m.	[1] 87	74
2	12 m.	[1] 78	83	9	3 p. m.	[1] 89	86
2	3. p. m.	[1] 78	88	10	7 a. m.	[1] 88	72
2	6 p. m.	[1] 78	82	10	12 m.	[1] 89	98
2	9 p. m.	[1] 76	70	10	3 p. m.	[1] 90	104
2	12 mid.	[1] 76	68	10	6 p. m.	[1] 89	98
3	7 a. m.	[1] 76	66	11	7 a. m.	[1] 87	68
3	9 a. m.	[1] 78	69	11	1 p. m.	[1] 88	74
3	12 m.	[1] 78	71	11	6 p. m.	[1] 88	74
3	3 p. m.	[1] 82	86	12	7 a. m.	[1] 88	70
3	6 p. m.	[1] 82	82	12	10 a. m.	[1] 89	80
4	7 a. m.	[1] 82	70	12	12 m.	[1] 89	74
4	9 a. m.	[1] 83	78	12	3 p. m.	[1] 90	96
4	12 m.	[1] 83	86	12	6 p. m.	[1] 90	94
4	3 p. m.	[1] 84	90	13	3 p. m.	[1] 90	100
4	6 p. m.	[1] 84	88	14	7 a. m.	[1] 89	78
4	10 p. m.	[1] 83	76	14	12 m.	[1] 90	96
5	7 a. m.	[1] 83	74	14	3 p. m.	[1] 90	104
5	9 a. m.	[1] 83	76	14	6 p. m.	[1] 89	96
5	12 m.	[1] 84	81	15	7 a. m.	[1] 88	79
5	3 p. m.	[1] 85	88	15	1 p. m.	[1] 90	102
5	6 p. m.	[1] 86	87	15	3 p. m.	[1] 91	104
6	3 p. m.	[1] 86	90	15	6 p. m.	[1] 90	96
7	7 a. m.	[1] 86	66	16	7 a. m.	[1] 89	89
7	12 m.	[1] 86	78	16	1 p. m.	[1] 91	106
7	3 p. m.	[1] 88	89	16	7 p. m.	[1] 89	80

[1] New concrete.

East abutment—Continued.

Date.	Time.	Temperature.		Date.	Time.	Temperature.	
		Concrete.	Air.			Concrete.	Air.
1911.				1911.			
Aug. 16	11 p. m.	[1] 89	72	Aug. 25	10 a. m.	[1] 87	77
17	7 a. m.	[1] 88	73	26	10 a. m.	[1] 87	82
17	2 p. m.	[1] 89	82	27	10 a. m.	[1] 86	67
17	6 p. m.	[1] 89	94	28	10 a. m.	[1] 86	64
18	1 a. m.	[1] 88	70	29	10 a. m.	[1] 85	70
18	6 a. m.	[1] 88	71	30	5 p. m.	[1] 86	78
18	3 p. m.	[1] 90	88	Sept. 1	10 a. m.	[1] 86	88
19	1 a. m.	[1] 88	68	2	10 a. m.	[1] 86	82
19	6 a. m.	[1] 88	68	5	10 a. m.	[1] 86	84
19	10 p. m.	[1] 88	70	6	10 a. m.	[1] 86	82
20	3 p. m.	[1] 88	89	7	10 a. m.	[1] 85	62
21	3 p. m.	[1] 88	82	8	10 a. m.	[1] 85	64
22	10 a. m.	[1] 89	68	9	10 a. m.	[1] 85	72
23	10 a. m.	[1] 87	72	10	2 p. m.	[1] 85	84
24	10 a. m.	[1] 87	72	11	10 a. m.	[1] 85	80

[1] New concrete.

[Pier No. 1.]

Date.	Temperature of concrete.	Average daily temperature (Weather Bureau).	Date.	Temperature of concrete.	Average daily temperature (Weather Bureau).
1910.			1910.		
Nov. 21	[1] 45	32	Dec. 6	55	25
22	[1] 45	40	7	54	20
23	[1] 45	44	8	52	18
26	62	44	9	51	25
28	64	27	10	49	30
29	64	26	12	46	14
30	64	22	13	45	22
Dec. 1	64	19	14	44	40
2	62	20	15	43	33
3	60	29	16	42	32
5	56	30			

[Pier No. 2.]

1910.			1911.		
Dec. 28	43	33	Jan. 3	[1] 58	−6
30	[1] 48	24	4	[1] 58	14
31	[1] 54	36	6	[1] 56	18
			10	[1] 51	35
			12	[1] 46	16

[1] New concrete.

West abutment.

Date.	Temperature of concrete.	Average daily temperature (Weather Bureau).
1911.		
May 17	66	79
27	[1] 86	72

[1] New concrete.

TABLE 1.—*Climatological data for August, 1911. District No. 5, Upper Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
North Dakota.																				
Amenia	Cass	954	14	6.51	− 1.0	96	14	36	29	43	2.35	− 0.97	0.83	0	7	10	10	11	nw.	C. E. Wood.
Bottineau	Bottineau	1,638	16	60.5	− 2.9	89	14	32	28	36	4.78	+ 3.22	1.32	0	17	7	13	11	nw.	A. J. Carlson.
Cando	Towner	1,488	10	61.6	− 1.4	89[c]	14	33	28	37[d]	4.24	+ 2.10	1.40	0	13	....	....	....	....	E. T. Judd.
Crosby	Divide		5	60.3	.....	89	13	31	22	.....	2.32	.....	0.38	0	12	19	6	6	se.	H. C. Kaschau.
Devils Lake	Ramsey	1,482	6	61.4	− 3.7	87	13	37	28	28	5.43	+ 2.67	2.18	0	16	9	13	9	nw.	U. S. Weather Bureau.
Donnybrook	Ward	1,760	12	59.3	− 5.1	86	14	31	22†	40	4.22	+ 1.34	2.37	0	15	....	....	....	se.	C. J. DeVore.
Dunseith	Rolette		14																	L. H. Trowbridge.
Edmore	Ramsey	1,524	6	61.0	.....	89	14	32	28	40	4.43	.....	1.25	0	12	16	12	3	nw.	H. R. Aslakson.
Forman	Sargent	1,249	17	66.6	− 0.7	94	13	36	23	44	2.70	− 0.50	0.80	0	9	17	8	6	nw.	A. Maltby.
Grafton	Walsh	827	20	62.0	− 2.3	91	13	35	28	40	2.78	+ 0.36	0.78	0	13	11	5	15	w.	A. R. T. Wylie.
Granville	McHenry	1,504	5	61.6	.....	90	13	34	22†	35	5.05	.....	2.71	0	9	9	19	3	nw.	W. A. Christianson.
Hannah	Cavalier	1,568	6	59.8	.....	89	14	27	28	40	3.22	.....	1.79	0	6	19	3	9	nw.	J. Moffatt.
Hansboro	Towner		3	60.4	.....	88	13	33	28†	39	3.64	.....	1.65	0	12	16	11	4	nw.	Geo. Dale.
Hillsboro	Traill	901	6	65.2	.....	90	14	37	29	34	3.80	.....	1.33	0	11	17	11	3	nw.	F. E. Mayall.
Lakota	Nelson	1,519	5	59.3	.....	85	13	33	28	31	4.95	.....	1.23	0	13	4	24	3	nw.	C. R Pettes.
Langdon	Cavalier	1,615	16																	J. Woolner.
Larimore	Grand Forks	1,134	16	62.5	− 1.5	90	14	35	28	37	4.31	+ 1.29	0.73	0	15	14	8	9	nw.	J. Dexter Pierce.
Lisbon	Ransom	1,091	7	65.2	− 1.3	92	14	32	29	46	2.95	+ 1.26	0.91	0	14	13	6	12	nw.	H. K. Adams.
McKinney	Renville	1,640	17	60.4	− 3.2	86	14†	30	28	42	3.10	+ 1.72	0.50	0	11	5	21	5	nw.	N. P. Swenson.
Manfred	Wells	1,605	10	61.8	.....	90	13	33	28	38	3.33	.....	1.35	0	9	8	17	6	nw.	P. B. Anderson.
Mayville	Traill	975	15																	W. C. Gould.
Minot	Ward	1,557	13	62.0	− 3.8	89	14	33	28	36	4.87	+ 2.51	1.53	0	14	17	5	9	nw.	J. J. Bates.
Minto	Walsh	820	18	63.4	− 1.2	91	13†	35	28	38	3.20	+ 0.66	0.78	0	13	14	10	7	.....	S. S. Marsh.
Oriska	Barnes	1,270	6	62.7	.....	89	14	33	29	45	3.04	.....	1.08	0	7	7	19	5	nw.	W. E. Williams.
Park River	Walsh	998	8	67.4	.....	97	14	37	28†	44	3.81	.....	0.74	0	11	9	19	3	w.	A. Heyward.
Pembina	Pembina	789	13	61.7	− 2.1	90	14	34	28	40	1.21	− 1.30	0.40	0	12	14	4	13	w.	C. W. Shumaker.
Power	Richland	1,020	19																	J. A. Power.
Pratt	McHenry		6	59.0	.....	90	13	31	21	46	5.71	.....	2.90	0	7	....	....	....	nw.	W. B. Ahern.
Towner	do		3																	B. Bagley.
University	Grand Forks	830	19	63.5	− 1.4	92	14	37	29	40	3.30	+ 0.78	0.89	0	12	11	11	9	w.	H. E. Simpson.
Wahpeton	Richland	962	19	63.0	− 4.8	90	14	35	23	37	3.99	+ 0.94	1.90	0	9	11	9	11	se.	E. G. Burch.
Walhalla	Pembina	966	7	62.2[b]	.....	90[b]	13†	37[b]	28	39[i]	5.36	.....	1.72	0	10	....	....	....	....	Ivan DeL. Lee.
Westhope	Bottineau		5	66.0	.....	88	13	32	28	34	5.38	.....	2.45	0	14	10	18	3	ne.	W. A. Meddaugh.
Willow City	do	1,471	18	60.4	− 3.7	89	13	32	28	40	4.77	+ 2.93	1.86	0	12	7	19	5	nw.	M. A. Ostby.
Minnesota.																				
Albert Lea	Freeborn	1,229	20	67.4	− 2.0	91	15	40	28†	34	4.75	+ 0.82	1.70	0	10	14	15	2	se.	Edward Carey.
Alexandria	Douglas	1,391	17	64.5	− 2.7	89	31	40	23†	40	5.81	+ 2.29	1.51	0	16	12	2	17	nw.	P. O. Unumb.
Angus	Polk	870	9	62.0	.....	90	14	36	23	40	3.89	.....	1.15	0	11	16	10	5	nw.	John Nadvornik.
Bagley	Clearwater		5	60.0	.....	87	14	29	29	41	1.84	.....	0.55	0	6	3	27	1	sw.	Jens Nelson.
Beardsley	Bigstone	1,000	17																	R. J. Buckley.
Beaulieu	Mahnomen	1,200	9																	Dr. P. A. Slattery.
Bird Island	Renville	1,039	12	64.8	− 4.2	90	15	36	29	38	2.55	− 0.90	0.52	0	12	8	13	10	nw.	Dr. F. L. Puffer.
Caledonia	Houston	1,179	18	66.4	− 2.5	85	15	45	29	24	6.94	+ 3.12	2.58	0	11	10	7	14	sw.	W. D. Belden.
Campbell	Wilkin	984	2	63.8	.....	92	15†	34	23†	49	3.87	.....	1.40	0	8	10	5	16	se.	J. T. Neisess.
Cass Lake	Cass	1,300	4								5.00	.....	1.50	0	6	....	....	....	....	C. W. Burns.
Collegeville	Stearns	1,282	18	66.4	− 2.4	90	16	42	28	31	2.48	− 0.42	0.99	0	12	19	3	9	s.	Fridolin Tembreul.
Crookston	Polk	863	21	63.4	− 2.5	89	14	40	23	33	3.27	− 0.08	0.52	0	15	15	2	14	s.	A. G. Andersen.
Detroit	Becker	1,364	15	63.2	− 1.6	89	8†	34	23	43	4.99	+ 1.04	0.92	0	14	11	15	5	sw.	G. W. Peoples.
Ely	St. Louis			61.2	.....	84	14	40	29	28	2.56	.....	0.57	0	11	15	6	10	nw.	Rev. W. H. Farrell.
Fairmont (near)	Martin	1,240	24	67.4	− 1.9	92	15	39	28	32	3.72	+ 0.82	1.72	0	8	10	16	5	nw.	W. F. Wherland.
Faribault	Rice	1,003	14																	Dr. A. B. Moulton.
Farmington	Dakota	902	23	67.0	− 1.7	92	15	40	29	33	3.78	+ 0.38	1.73	0	11	13	7	11	sw.	E. D. Akin.
Fergus Falls	Otter Tail	1,210	19	65.4	− 2.4	87	31	42	23	36	2.96	+ 0.13	1.15	0	12	12	11	8	se.	C. E. Kissinger.
Fort Ripley	Crow Wing	1,136	4	62.9	.....	87	15†	34	23†	40	3.78	+ 0.63	0.75	0	8	16	1	14	se.	J. J. Tucker.
Fosston	Polk	1,289	2	61.8	.....	88	14	39	23†	34	2.61	.....	0.62	0	12	6	22	3	nw.	O. N. Hem.
Fram	Marshall			60.8	.....	88	14	32	29	49	3.15	.....	0.68	0	12	4	24	3	w.	A. W. Clark.
Glencoe	McLeod	1,000	15	66.6	− 1.6	89	16	41	28	35	3.40	+ 0.27	1.00	0	6	19	11	1	s.	F. B. Reed.
Grand Meadow	Mower	1,338	23	66.0	− 2.5	90	15	39	29	36	13.34	+ 9.91	6.41	0	14	12	14	5	nw.	C. F. Greening.
Gull Lake Dam	Cass	1,215	....	61.6	.....	86	15	35	29	34	3.52	.....	1.00	0	10	5	22	4	nw.	G. A. Williams.
Hallock	Kittson	815	12	62.4	− 1.9	90	13†	34	28	43	2.86	− 0.52	0.66	0	12	18	5	8	n.	D. A. Robertson.
Halstad	Norman	870	5	63.6	.....	92	14	36	23†	40	3.30	.....	1.10	0	14	17	3	11	nw.	A. G. Holstrom.
Hinckley	Pine	1,050	6	63.5	.....	89	15	34	29	40	3.35	.....	0.87	0	6	12	13	6	s.	W. R. Newman.
International Falls	Koochiching	1,112	3	61.6	.....	89	13	33	29	37	6.43	.....	3.27	0	9	10	14	7	nw.	Rees Roe.
Itasca State Park	Clearwater	1,500	....	63.6	.....	94	20	35	23	47	6.38	.....	1.49	0	13	13	8	10	w.	J. A. Stillwell.
Kelliher	Beltrami		4																	A. Gilmour.
Lake Crystal	Blue Earth		4	66.4	.....	88	15	38	29	33	4.88	.....	1.46	0	9	13	14	4	nw.	W. P. Cobb.
Leech Lake Dam	Cass	1,301	23	61.2	− 2.2	85	20	31	29	38	5.30	+ 1.57	2.30	0	9	3	23	5	w.	Hans Olson.
Littlefork	Koochiching			59.2	.....	87	14	29	29	45	6.42	.....	3.27	0	13	14	11	6	.....	O. C. Olson.
Long Prairie	Todd	1,299	19	64.0	− 2.6	90	15	34	23	43	4.11	+ 0.70	1.20	0	9	13	10	8	nw.	A. L. Sheets.
Lynd	Lyon	1,175	19	65.2	− 2.9	92	15	37	28†	34	4.52	+ 1.16	2.55	0	10	12	12	7	nw.	J. W. Rouse.
Mankato	Blue Earth	758	12								4.68	+ 1.06	1.50	0	10	12	4	15	ne.	Sadie H. Blake.
Milaca	Mille Lacs	1,072	13	62.8	− 3.1	89	15	34	29	38	4.03	+ 0.88	0.70	0	15	6	20	5	nw.	C. H. Foss.
Milan	Chippewa	955	17	64.7	− 4.0	90	15	38	29	38	2.95	− 0.08	0.89	0	9	4	26	1	se.	O. K. Opjorden.
Minneapolis	Hennepin	918	20	66.6	− 3.1	89	15	45	29	28	3.65	− 0.04	0.66	0	12	9	8	14	nw.	U. S. Weather Bureau.
Montevideo	Chippewa	900	21	66.6	− 2.6	92	15	40	28	39	2.20	− 0.46	0.79	0	11	11	5	15	se,	L. G. Moyer.
Moorhead	Clay	935	30	64.4	− 1.5	90	14	40	29	39	2.96	− 0.14	1.09	0	12	12	11	8	se.	U. S. Weather Bureau.
Mora	Kanabec		6	63.8	.....	90	15	34	29	41	3.56	.....	0.64	0	15	25	5	1	nw.	Hans Peterson.
Morris	Stevens	1,170	26	65.2	− 2.4	87	15	40	28	34	2.84	− 0.18	0.98	0	8	20	8	3	nw.	D. T. Wheaton.
New London	Kandiyohi	1,215	17	63.8	− 5.3	89	15	40	27	33	2.28	− 0.59	0.62	0	8	7	21	3	sw.	Harold Swensen.
New Richland	Waseca	1,180	17	67.8	− 2.7	91	15	39	29	36	5.01	.....	2.11	0	9	14	13	4	ne.	N. O. Tyrholm.
New Ulm	Brown	791	31	67.0	− 4.4	92	15	40	29	34	4.90	+ 1.42	1.52	0	14	13	2	16	s.	A. L. Henle.
Osakis	Douglas	1,343	4	63.0	.....	86	15	36	23†	38	2.79	.....	0.83	0	11	13	9	9	n.	J. B. Johnson.
Park Rapids	Hubbard	1,426	21	62.2	− 1.9	88	14	36	29†	39	5.83	+ 2.05	0.86	0	17	9	1	21	nw.	Dr. P. A. Walling.
Pine River Dam	Crow Wing	1,251	24	62.4	− 3.4	87	20	32	29	40	2.78	− 1.33	1.45	0	7	10	16	5	nw.	Neil McKay.
Pokegama Falls	Itaska	1,280	24	61.0	− 2.1	86	20	33	29	40	4.63	+ 0.92	1.46	0	11	13	11	7	sw.	A. L. Mampel.
Redlake	Beltrami	1,152	3	63.7	.....	86	18†	36	29	31	2.05	.....	0.95	0	8	11	15	5	w.	A. C. Goddard.
Red Wing	Goodhue	680	15								4.63	+ 0.63	1.60	0	13	15	3	13	se.	Louis Bach.
Redwood Falls	Redwood	1,050	4	68.0	.....	92	15	40	29	36	3.64	+ 1.12	1.02	0	12	13	12	6	nw.	N. B. Andersen.
Reeds Landing	Wabasha	681	16	.....	.....	.....	.....	.....	.....	.....	5.71	+ 1.84	1.80	0	12	13	0	18	sw.	John Deschneau.
Rochester	Olmstead	991	6	.....	.....	93	15	.....	.....	.....	6.08	.....	1.40	0	8	14	2	15	se.	S. R. Case.
Roseau	Roseau	1,040	3	60.8	.....	89	13	33	29	41	5.52	.....	3.00	0	10	21	1	9	w.	A. Waag.
St. Charles	Winona	850	20	67.1	− 1.4	90	15	37	29	41	8.78	+ 5.64	2.15	0	12	13	10	8	n.	S. W. Gleason.
St. Cloud	Sherburne	1,020	33	65.3	− 2.7	90	15	40	23†	37	3.56	+ 0.04	0.90	0	12	10	13	8	se.	J. H. Capser.
St. Paul	Ramsey	837	40	66.1	− 3.4	90	15	44	29	29	5.50	+ 2.04	2.78	0	14	11	15	5	se.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for August, 1911. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Minnesota—Continued.																			
St. Peter	Nicollet	825	17	67.4	− 2.6	89	15†	35	30	38	3.39	− 0.01	0.93	0	9	7	17	7	s.	State Hospital.
Sandy Lake Dam	Aitkin	1,234	18	60.5	− 4.3	83	14	34	29	38	2.43	− 1.55	0.72	0	7	7	19	5	sw.	A. Newstrom.
State Sanatorium	Cass		3	63.2	.....	85	20	41	23	37	4.63	.....	1.95	0	13	6	19	6	s.	Dr. W. J. Marcley.
Stillwater	Washington	694	9	.....	.....	.....	.....	.....	.....	.....	5.06	.....	1.70	0	14	14	6	11	se.	Oscar Ostrom.
Taylors Falls	Chisago	759	4	65.7	.....	90	15	37	29	35	3.24	.....	1.80	0	6	15	9	7	s.	Minneapolis Gen. Elec. Co.
Warroad	Roseau	1,069	2	61.0	.....	86	14	33	29	41	2.14	.....	0.65	0	10	13	9	9	w.	J. H. Sawyer.
West Concord	Dodge	1,232	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. H. Orcutt.
Winnebago	Faribault	1,100	12	67.8	− 2.6	95	15	39	29	37	3.87	− 0.08	0.70	0	17	12	8	11	se.	H. H. Haight.
Winnibigoshish	Itaska	1,300	23	63.8	− 0.6	88	20	40	29	34	6.23	+ 2.63	3.74	0	10	19	8	4	w.	John Duncan.
Winona	Winona	700	15	69.1	− 0.9	95	15	40	29	34	3.76	− 0.14	1.09	0	12	11	10	10	w.	P. C. Myers.
Worthington	Nobles	1,593	16	67.0	− 1.6	93	14	39	28	37	7.48	+ 4.15	2.98	0	15	12	3	16	s.	M. P. Mann.
Zumbrota	Goodhue	917	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. C. Rowell.
South Dakota.																			
Milbank	Grant	1,148	20	64.9	− 3.7	93	15	37	28	41	3.08	+ 0.27	0.84	0	10	13	2	16	nw.	I. T. Patridge.
Wisconsin.																			
Antigo	Langlade	1,489	17	63.8	− 1.3	89	15	35	29	32	3.76	.....	1.46	0	8	22	4	5	w.	Elton C. Larzelere.
Barron	Barron	1,115	20	63.0	− 1.9	87	15	33	29	35	2.79	− 0.66	0.91	0	5	15	12	4	w.	Wm. A. Kent.
Beloit	Rock	750	45	68.6	− 2.0	88	17	46	29	24	7.71	+ 4.10	2.10	0	11	25	0	6	w.	Smith Observatory.
Big St. Germain Dam	Vilas	1,590	1	61.6	.....	89	15	33	29	37	4.52	.....	1.76	0	9	18	8	5	sw.	Oscar Brehmer.
Brodhead	Green	812	13	70.4	− 0.2	93	6†	45	30	34	5.79	+ 1.57	1.75	0	12	18	13	0	sw.	Hector D. Kirkpatrick.
Burnett	Dodge	880	7	66.6	.....	90	6	36	29	34	3.35	.....	0.87	0	12	7	18	6	nw.	Geo. W. Smith.
Cottage Grove	Dane	888		.....	.....	.....	.....	.....	.....	.....	4.01	.....	2.39	0	11	15	13	3	sw.	John E. Mellish.
Darlington	Lafayette	867	5	68.7	.....	92	6	39	29	34	8.45	.....	2.65	0	8	15	11	5	nw.	S. P. Nelson.
Deerskin Dam	Forest	1,625	1	.....	.....	89	15	.....	.....	.....	4.56	.....	1.50	0	9	16	13	2	sw.	Wm. E. O'Neal.
Delavan	Walworth	920	20	69.4	− 0.4	92	10	40	29	31	5.12	+ 1.73	1.42	0	10	8	18	5	nw.	Elwood S. Austin.
Dodgeville	Iowa	1,116	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. H. Butler.
Downing	Dunn	983	9	61.2°	.....	89°	17	30°	29	37°	1.44	.....	0.55	0	6	7°	3°	16°	w.	Eugene F. Stoddard.
Eau Claire	Eau Claire	800	20	66.8	− 2.4	89	15	40	29	31	2.59	− 0.67	0.65	0	10	14	13	4	nw.	Robert D. Whitford.
Grand Rapids	Wood	1,021	12	65.6	− 2.4	91	15	34	29	38	4.11	+ 1.50	1.24	0	11	15	4	12	sw.	Willis B. Raymond.
Grantsburg	Burnett	1,095	20	64.8	− 1.6	91	15	34	29	39	2.09	− 1.36	0.60	0	8	13	7	11	nw.	Theodore Olsen.
Hancock	Waushara	1,091	19	67.9	− 0.7	92	15	37	29	34	3.81	+ 0.77	1.65	0	10	18	8	5	n w.	Frederick B. Hamilton.
Hatfield	Jackson	973	17	64.2	− 3.5	92	5	33	29†	45	4.77	+ 1.68	1.80	0	11	1	22	8	nw.	Walter S. Woods.
Hayward	Sawyer	1,197	20	63.8	− 1.9	89	15	30	29	38	3.01	− 0.46	1.10	0	8°	6°	17°	7°	sw.	William E. Swain.
Hillsboro	Vernon	1,000	20	64.6	− 2.8	90	15	33	29	37	3.78	+ 0.59	1.40	0	11	13	15	3	sw.	Emil V. Wernick.
Koepenick	Langlade	1,683	20	61.6	− 2.7	88	15	32	29	38	5.05	+ 1.64	1.40	0	9	.....	.....	.....	sw.	Edward S. Koepenick.
Lac du Flambeau	Vilas		1	63.9	.....	89	15	40	28	30	4.07	.....	1.74	0	10	20	4	7	w.	W. J. Lovett.
La Crosse	La Crosse	714	39	67.8	− 2.2	90	15	42	29	29	3.49	+ 0.08	1.22	0	12	9	8	14	s.	U. S. Weather Bureau.
Lake Mills	Jefferson	897	20	69.5	+ 0.3	94	6	43	29	33	4.29	+ 0.75	2.03	0	11	15	15	1	sw.	S. Newton Dexter Smith.
Lancaster	Grant	1,070	20	68.2	− 1.7	90	16	43	29	32	8.84	+ 6.14	2.86	0	12	10	18	3	sw.	Edward Pollock.
Long Lake	Oneida	1,592	3	61.2	.....	89	15	31	29	41	4.90	.....	1.62	0	11	18	6	7	w.	Louis Frank.
Madison	Dane	974	42	68.8	− 0.8	89	6	48	29	27	3.78	+ 0.57	1.93	0	12	8	15	8	sw.	U. S. Weather Bureau
Mather	Juneau	962	7	64.2	.....	89	15	32	29	40	3.40	.....	0.75	0	11	6	12	13	e.	Frank Evans.
Mauston	....do	882	15	66.2	− 1.6	85	15†	36	29	31	3.71	+ 0.37	0.85	0	10	12	17	2	sw.	Eugene L. Hitchcock.
Meadow Valley	....do	974	20	65.6	− 1.5	90	15	34	29	38	3.65	+ 0.44	1.00	0	10	5	23	3	nw.	Charles H. Johnson.
Medford	Taylor	1,420	22	64.0	− 3.3	90	15	34	29	36	2.84	− 0.68	0.80	0	7	23	5	3	w.	Wm. Zeit.
Merrill	Lincoln	1,267	5	65.3	.....	90	15	35	29†	40	2.54	.....	0.68	0	7	16	6	9	s.	J. M. Wilson.
Minocqua	Oneida	1,604	7	63.0	.....	88	15	37	29	33	4.03	.....	1.55	0	11	13	13	5	w.	Benjamin W. Applebee.
Mondovi	Buffalo	738	3	66.4	.....	91	15	36	29	33	4.62	.....	1.08	0	12	17	7	7	nw.	Dr. Chas. Hebard.
Mount Horeb	Dane	1,226	7	68.0	.....	89	15	43	29	32	5.05	.....	1.88	0	11	18	9	4	s.	W. M. Lewis.
Muscoda	Grant	666	2	71.3	.....	94	15	44	29	34	4.87	.....	1.90	0	10	15	6	10	nw.	Wm. Hessler.
Neillsville	Clark	996	21	66.4	− 0.7	91	15	36	29	38	3.90	+ 0.62	1.12	0	6	16	0	15	nw.	Wm. Heaslett.
New Richmond	St. Croix	990	6	65.0	.....	91	15	36	29	37	3.72	.....	0.97	0	11	15	15	1	sw.	Franc A. R. Van Meter.
Osceola	Polk	806	20	65.8	− 1.2	91	14	35	29	38	1.53	− 1.75	0.34	0	8	11	12	8	e.	Charles W. Staples.
Park Falls	Price	1,492	20	62.4	.....	89	15	31	29	39	3.84	.....	1.58	0	13	7°	16°	7°	w.	Flambeau Paper Co.
Portage	Columbia	809	22	.....	.....	.....	.....	44	29	.....	2.84	− 0.39	0.56	0	10	12	17	2	sw.	James H. Martin.
Port Edwards	Wood	969	1	67.0	.....	91	15	35	29	37	3.92	.....	1.20	0	10	16	0	15	nw.	Nekoosa-Edwards Paper Co.
Prairie du Chien	Crawford	690	20	69.6	− 1.5	92	15†	43	29	37	8.00	+ 4.74	4.00	0	10	10	2	19	s.	James H. Gillis.
Prentice	Price	1,551	13	59.8	− 4.7	87	15†	26	29	40	1.71	− 2.42	0.78	0	7	12	4	15	s.	Joseph G. Lash.
Rhinelander	Oneida	1,550	5	63.8	.....	88	15	35	29	34	3.29	.....	1.28	0	12	17	7	7	w.	Rhinelander Power Co.
Sauk City	Sauk	758	3	.....	.....	.....	.....	41	29†	.....	4.83	.....	1.76	0	6	12	12	7	.....	Kilien Derleth.
Shullsburg	Lafayette	1,019	5	.....	.....	86	15†	42	29	.....	10.12	.....	2.17	0	14	17	2	12	sw.	Harrison B. Chamberlain.
Solon Springs	Douglas	1,083	5	62.6	.....	89	15	34	29	45	2.40	.....	1.00	0	5	14	9	8	sw.	John M. Sayles.
Spooner	Washburn	1,104	17	63.6	− 3.3	88	15	34	29	34	2.52	− 0.64	1.26	0	7	16	8	7	s.	Horace A. Bresee.
Stanley	Chippewa	1,082	7	64.2	.....	88	15	32	29	38	2.42	.....	0.90	0	4	17	9	5	nw.	W. Humphrey Scott.
Stevens Point	Portage	1,113	18	65.8	− 1.7	90	16	35	29	40	5.03	+ 2.14	1.76	0	5	19	7	5	w.	Garry E. Culver.
Sugar Camp Dam	Oneida	1,582	1	.....	.....	.....	.....	.....	.....	.....	7.07	.....	2.10	0	12	.....	.....	.....	sw.	Robert Hayes.
Twin Lakes Dam	Vilas	1,625	1	.....	.....	.....	.....	.....	.....	.....	6.43	.....	2.28	0	7	9	17	5	sw.	Albert D. Hansen.
Valley Junction	Monroe	930	19	65.2	− 1.9	86	15	34	29	35	4.47	+ 1.19	0.86	0	10	11	10	10	w.	Frederick Muermann.
Viroqua	Vernon	1,412	21	67.4	− 1.3	89	15	43	29	30	4.22	+ 0.44	1.62	0	13	8	15	8	sw.	Henry E. Rogers.
Vudesare	Vilas	1,600	3	60.6	.....	86	16	34	29	40	5.98	.....	1.97	0	6	14	16	1	w.	Louis L. Thomas.
Watertown	Jefferson	824	20	68.8	+ 0.4	90	7	42	29	34	2.17	− 0.56	1.05	0	9	11	20	0	e.	Charles J. Salick.
Waukesha	Waukesha	864	20	69.1	+ 0.3	92	7	43	29†	33	2.33	− 0.80	0.62	0	8	12	18	1	sw.	Carroll College.
Wausau	Marathon	1,212	16	64.5	− 2.0	88	15	37	29	30	3.65	+ 0.07	0.87	0	9	17	8	6	sw.	George H. Halder.
Weyerhaeuser	Rusk	1,297	9	63.0	.....	89	15	36	19†	43	2.13	.....	0.82	0	10	17	8	6	nw.	Miss Etta Stiles.
Whitehall	Trempealeau	675	20	65.8	− 2.5	90	15	36	29	43	4.00	+ 0.37	1.10	0	7	15	0	16	w.	Hans J. Haugh.
Iowa.																			
Albia	Monroe	959	13	76.6	+ 3.2	104	10	43	29	42°	1.07	− 3.08	0.74	0	5	17	11	3	se.	J. I. Chenoweth.
Algona	Kossuth	1,213	37	71.6	+ 0.7	95	15	38	29	35	1.43	− 2.49	0.40	0	8	21	6	4	se.	Dr. F. T. Seeley.
Alta	Buena Vista	1,513	20	69.8	− 0.7	95	15	40	29	39	2.79	− 1.18	1.05	0	11	12	15	4	se.	David E. Hadden.
Amana	Iowa	721	35	70.4	+ 0.5	95	16	41	29	37	3.58	− 0.03	1.13	0	8	16	13	2	se.	C. Schadt.
Ames	Story	926	35	72.6	+ 0.4	101	16	41	30	41	3.28	− 0.39	0.64	0	10	.....	.....	.....	se.	Iowa State College.
Baxter	Jasper	998	11	72.8	+ 0.9	101	14†	42	30	38	2.05	− 2.50	0.62	0	8	.....	.....	.....	se.	W. R. Vandike.
Belle Plaine	Benton	828	21	70.4	− 0.4	99	16	40	29	43	2.76	− 1.39	0.70	0	9	10	15	6	se.	S. P. Van Dike.
Belmond	Wright		1	69.2	.....	93	14	40	29	38	3.56	.....	0.75	0	14	6	21	4	se.	Geo. P. Hardwick.
Bloomfield	Davis		4	75.8	.....	104	16	44	29	38	1.13	.....	0.48	0	3	16	12	3	se.	Albert Power.
Bonaparte	Van Buren		20	73.4	− 0.9	99	10	46	29†	38	2.47	− 2.18	0.61	0	6	.....	.....	.....	.....	Hon. B. R. Vale.
Boone	Boone	1,134	6	70.4	.....	98	16	44	28†	34	2.74	.....	0.67	0	11	17	3	11	.....	Carl Fritz Henning.
Britt	Hancock	1,236	14	69.0	− 1.0	93	15	40	28†	36	2.55	− 1.50	0.88	0	11	17	11	3	s.	L. H. Goodman.
Buckingham	Tama		11	.....	.....	.....	.....	.....	.....	.....	3.79	− 1.24	1.11	0	9	.....	.....	.....	.....	J. S. Guynn.

TABLE 1.—*Climatological data for August, 1911. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Iowa—Continued.																			
Burlington	Des Moines	544	15	73.3	− 0.8	96	16	49	30	37	3.85	− 1.59	0.80	0	10	25	1	5	s.	Max E. Poppe, jr.
Carroll	Carroll	1,265	21	70.2	− 0.9	97	15	44	28	39	3.47	− 0.24	1.04	0	5	18	9	4	ne.	Mrs. Jos. J. Wolfe.
Cedar Rapids	Linn	733	29	71.2	− 1.5	98	16	46	29†	39	5.00	+ 1.50	1.47	0	8	17	0	14	s.	R. S. Toogood.
Charles City	Floyd	1,015	20	68.4	− 2.3	90	15	41	29	30	4.62	+ 1.20	2.20	0	13	8	10	13	se.	U. S. Weather Bureau.
Clear Lake	Cerro Gordo	1,241	13	70.0	− 1.7	96	16	43	29	33	4.51	+ 0.20	1.20	0	10	18	0	13	s.	Oscar Stevens.
Clinton	Clinton	503	44	70.7	− 0.6	92	10	42	29	35	5.73	+ 2.08	1.95	0	12	12	14	5	s.	Luke Roberts.
Columbus Junction	Louisa	595	10	72.7	+ 0.3	94	10†	46	28	34	3.82	− 2.40	0.88	0	10	26	5	0	ne.	J. B. Johnston.
Davenport	Scott	580	40	72.4	− 0.6	94	10	49	29	30	4.92	+ 1.28	1.80	0	12	14	14	3	e.	U. S. Weather Bureau.
Decorah	Winnishiek	875	18	70.4	+ 0.2	97	15	40	29	37	8.17	+ 5.13	3.26	0	13	.....	.....	.....	.....	F. H. Baker.
Delaware	Delaware	1,083	20	68.2	− 1.4	91	10†	44	29	35	7.64	+ 4.10	1.30	0	12	10	19	2	se.	William Ball.
Des Moines	Polk	861	33	73.8	+ 0.8	102	16	49	29	34	1.82	− 1.79	1.42	0	9	14	12	5	e.	U. S. Weather Bureau.
Dubuque	Dubuque	630	38	70.1	− 1.9	91	16	45	29	30	8.74	+ 5.70	3.75	0	13	8	14	9	s.	Do.
Earlham	Madison	.....	9	72.4	.....	103	16	39	29	47	3.49	.....	2.25	0	7	20	6	5	se.	George Phillips.
Elkader	Clayton	727	32	69.0	− 2.0	95	16	40	29	38	5.41	+ 2.51	1.56	0	13	19	9	3	se.	Chas. Reinecke.
Elma	Howard	.....	2	66.2	.....	89	15	40	29	33	7.76	.....	2.20	0	14	7	22	2	se.	H. A. Moore.
Estherville	Emmet	1,298	16	67.0	− 3.2	94	15	38	29	38	4.31	+ 0.71	1.08	0	11	20	0	11	s.	A. O. Peterson.
Fairfield	Jefferson	.....	27	70.3	− 1.0	98	10†	37	29	42	0.45	− 3.63	0.45	0	1	28	0	3	s.	R. Monroe McKenzie.
Fayette	Fayette	1,003	21	67.8	− 1.3	89	15	38	29	34	6.32	+ 3.05	1.92	0	9	20	6	5	sw.	R. Z. Latimer.
Forest City	Winnebago	1,226	17	67.9	− 2.4	94	15	41	28†	34	2.40	− 1.10	0.96	0	13	12	11	8	s.	J. A. Peters.
Fort Dodge	Webster	1,126	11	70.8	− 0.6	98	15	40	29	39	2.51	− 3.13	0.60	0	9	20	2	9	n.	J. F. Monk.
Fort Madison	Lee	516	62	.....	.....	.....	.....	.....	.....	.....	2.60	− 1.19	0.84	0	6	7	14	10	s.	Miss L. A. McCready.
Gilman	Marshall	1,052	12	.....	.....	.....	.....	.....	.....	.....	2.99	− 0.79	1.14	0	9	.....	.....	.....	.....	J. L. Wylie.
Grand Meadow	Clayton	1,180	20	70.4	+ 1.5	88	16	44	29	25	6.14	+ 2.81	1.85	0	14	7	17	7	se.	F. L. Williams.
Grinnell	Poweshiek	1,023	19	72.2	+ 0.6	100	16	42	29	42	3.09	− 1.53	1.01	0	11	19	9	3	s.	D. W. Brainard.
Grundy Center	Grundy	976	20	71.9	+ 0.9	95	15	40	29	35	5.88	+ 2.31	1.70	0	11	.....	.....	.....	se.	J. B. Calderwood.
Guthrie Center	Guthrie	1,077	16	74.0e	+ 1.8	101e	16	44e	28	39e	1.50	− 2.82	0.76	0	6	.....	.....	.....	sw.	D. G. Beardsley.
Hampton	Franklin	1,155	21	70.8	+ 0.2	94	14	41	29	35	3.58	+ 0.21	0.88	0	10	8	19	4	nw.	E. C. Grenelle.
Humboldt	Humboldt	1,095	23	72.2	+ 4.3	96	13	38	28	36	2.12	− 1.32	0.68	0	10	28	2	1	se.	Henry S. Wells.
Independence	Buchanan	921	47	68.5	− 1.6	91	16	41	29	37	5.87	+ 2.68	1.10	0	12	20	9	2	nw.	R. E. Dudley.
Indianola	Warren	969	20	74.0	+ 1.2	103	10	48	29	38	2.80	− 1.88	1.65	0	7	18	0	13	w.	Prof. J. L. Tilton.
Iowa City	Johnson	683	51	70.3	− 1.4	94	16	41	29	38	4.27	+ 0.03	1.13	0	9	19	0	12	se.	Prof. A. G. Smith.
Iowa Falls	Hardin	1,170	18	68.0	− 1.9	91	10	38	29	36	3.60	+ 0.22	1.13	0	12	18	3	10	ne.	J. B. Parmelee.
Jefferson	Greene	.....	12	73.2	.....	103	10	40	29	42	1.96	− 1.80	0.65	0	6	13	14	4	se.	M. E. Hall.
Keokuk	Lee	547	40	74.2	− 0.4	99	10	50	30	34	1.74	− 1.50	0.49	0	8	15	13	3	s.	Weather Bureau.
Keosauqua	Van Buren	644	19	74.8	+ 0.3	102	16	40	29	54	1.43	− 2.39	0.61	0	5	3	24	4	.....	J. H. Landes.
Knoxville	Marion	920	16	75.2	+ 1.5	102	10†	46	29	34	1.48	− 3.19	0.93	0	4	11	14	6	ne.	Casey & Bellville.
Lacona	Warren	.....	12	.....	.....	.....	.....	.....	.....	.....	2.09	− 2.73	0.80	0	10	7	22	2	.....	J. B. Alter.
Le Claire	Scott	576	11	.....	.....	.....	.....	.....	.....	.....	6.69	+ 3.10	2.90	0	13	.....	.....	.....	.....	Miss M. T. Disney.
Marshalltown	Marshall	947	19	71.9	+ 0.1	103	16	39	29	38	2.37	− 1.27	0.70	0	11	18	4	9	ne.	Ralph B. Reasoner.
Mason City	Cerro Gordo	1,132	14	67.4	− 2.6	88	14†	36	29	34	4.41	+ 0.81	1.26	0	11	16	13	2	s.	J. S. Mills.
Mount Pleasant	Henry	720	30	73.9	+ 0.6	94	10†	44	30	37	2.23	− 1.84	1.03	0	8	22	7	2	se.	J. W. Edwards.
Muscatine	Muscatine	.....	51	.....	.....	.....	.....	.....	.....	.....	3.11	− 1.27	0.97	0	12	.....	.....	.....	.....	William Molis.
New Hampton	Chickasaw	1,169	14	69.0	− 0.5	90	15	45	29	32	5.27	+ 2.24	2.62	0	11	17	8	6	ne.	A. F. Kemman.
Northwood	Worth	1,222	15	67.4	− 2.1	88	15	40	29	31	4.00	− 0.04	1.13	0	10	11	10	10	nw.	Chas. H. Dwelle.
Olin	Jones	760	13	70.2	− 0.5	92	16	42	29	42	4.74	+ 0.03	1.88	0	9	21	8	2	.....	F. W. Post.
Osage	Mitchell	1,184	24	70.5	+ 2.5	92	14†	42	29	37	5.94	+ 2.91	2.10	0	10	12	12	7	nw.	Dr. A. D. Bundy.
Oskaloosa	Mahaska	843	35	74.4	+ 2.5	103	10†	44	29	37	0.83	− 2.39	0.60	0	4	21	4	6	se.	Joseph Boyd.
Ottumwa	Wapello	649	16	76.7	+ 1.7	105	10†	49	29	40	0.65	− 3.44	0.42	0	3	22	9	0	s.	Chester Potter.
Pella	Marion	877	9	73.0	.....	103	10†	38	29	44	1.09	− 3.09	0.85	0	7	27	2	2	se.	J. H. Ver Steeg.
Perry	Dallas	975	10	72.4	− 0.1	102	16	40	29	36	2.68	− 2.74	0.90	0	10	18	10	3	se.	Ed. S. Gray.
Plover	Pocahontas	1,426	15	70.3	−0.6	97	14	36	29	43	1.66	− 2.87	0.60	0	9	22	8	1	se.	J. S. Smith.
Pocahontas	do	1,248	7	69.9	.....	94	14†	40	28†	37	1.51	.....	0.62	0	7	22	7	2	se.	F. E. Hronek.
Ridgeway	Winneshiek	1,215	13	68.7	− 3.3	93	15	43	28	32	9.47	+ 5.75	2.74	0	16	13	13	5	s.	Arthur Betts.
Rockwell City	Calhoun	.....	15	71.0	− 1.3	94	14†	43	28†	35	4.15	+ 0.07	0.95	0	7	29	2	0	.....	C. M. Randall.
Sac City	Sac	1,278	35	72.0e	+ 1.5	95	9	45f	29	33f	3.93	+ 0.36	1.33	0	7	15	11	5	sw.	E. N. Baily.
St. Charles	Madison	1,070	10	75.5	+ 2.3	105	16	48	29	35	2.57	− 1.76	1.32	0	13	17	9	5	s.	R. D. Minard.
Sigourney	Keokuk	877	15	73.4	− 0.4	100	10†	46	29	39	0.74	− 3.11	0.40	0	4	4	27	0	ne.	J. T. Parker.
Stockport	Van Buren	745	9	73.6	.....	99	10†	40	29	45	2.01	.....	1.09	0	5	20	7	4	s.	C. L. Beswick.
Storm Lake	Buena Vista	1,440	22	71.0	− 0.7	93	14†	43e	28	31e	2.11	− 1.21	1.05	0	11	15	6	10	s.	Prof. Warren Ingold.
Tipton	Cedar	807	12	73.6	+ 1.0	95	16	51	29†	35	4.45	− 0.21	0.80	0	8	23	8	0	ne.	F. K. Gregg.
Toledo	Tama	856	17	71.0	− 1.0	100	16	40	29	33	1.74	− 1.96	0.48	0	7	20	9	2	se.	I. F. Giger.
Wapello	Louisa	588	13	71.8	− 1.7	91	10	49	30	29	2.73	− 2.27	1.21	0	8	17	13	1	se.	G. W. Schofield.
Washington	Washington	769	29	72.9	− 0.2	98	15	46	29	39	1.60	− 2.11	0.82	0	8	10	18	3	ne.	W. A. Cook.
Waterloo	Black Hawk	862	28	69.1	− 1.8	93	16	43	29	35	6.33	− 2.72	2.01	0	13	17	5	9	se.	Ralph B. Slippy.
Waukee	Dallas	1,039	8	72.3e	.....	102f	16	44	29	33f	1.86	− 3.45	1.06	0	8	22	6	3	sw.	Samuel F. Foft.
Waverly	Bremer	948	15	69.3	− 1.5	92	16	39	29	35	6.13	+ 3.17	1.23	0	11	8	15	8	se.	Earl C. Moore.
Webster City	Hamilton	.....	6	72.0	.....	99	16	40	29	42	2.08	.....	0.54	0	7	23	8	0	se.	C. D. Carpenter.
West Bend	Palo Alto	1,197	18	69.4	− 0.2	94	6	38	28†	38	1.91	− 2.03	0.75	0	9	15	14	2	s.	Phil. Dorweiler.
Whitten	Hardin	1,036	14	69.7	− 1.2	95	16	42	28†	38	5.55	+ 1.80	1.70	0	10	14	16	1	se.	Dr. F. P. Butler.
Winterset	Madison	1,129	20	74.5	+ 1.9	103	10†	45	29	36	3.60	− 0.13	1.47	0	10	11	14	6	e.	Dr. Robt. S. Cooper.
Missouri.																			
Gorin	Scotland	700	26	.....	.....	.....	.....	.....	.....	.....	1.39	− 1.52	0.66	0	4	7	18	6	se.	J. W. Pulliam.
Hannibal	Marion	534	19	75.0	0	98	10	49	31	40	1.46	− 1.92	1.04	0	5	11	9	11	e.	U. S. Weather Bureau.
Louisiana	Pike	500	34	73.4	− 1.3	98	11†	42	30	41	3.47	+ 0.56	1.01	0	7	21	4	6	e.	J. T. Farrell.
Mexico	Audrain	797	34	74.8	− 1.3	105	9	44	29	45	2.74	+ 0.01	0.88	0	10	19	2	10	s.	J. F. Llewellyn.
Steffenville	Lewis	576	18	77.7	+ 1.8	106	10	46	28†	46	1.91	− 1.37	1.10	0	4	21	8	2	ne.	Frank Hall.
Sublett	Adair	1,000	32	74.3	− 0.1	98	10	43	29	33	2.22	− 1.05	1.87	0	2	13	16	2	sw.	Lewis Spriggs.
Vandalia	Audrain	776	1	75.2	.....	103	10	45	29†	35	2.35	.....	1.20	0	2	22	0	9	se.	C. B. Ellis.
Warrenton	Warren	865	21	74.8	− 1.8	102	9†	47	30	31	5.89	+ 3.15	1.96	0	10	15	4	12	se.	Dr. J. H. Frick.
Indiana.																			
Collegeville	Jasper	.....	12	71.2	− 1.0	96	9	45	29†	40	3.36	− 0.66	1.50	0	6	15	12	4	ne.	Otto Miller.
Knox	Starke	716	6	70.0	.....	91	10	46	30	29	2.79	.....	1.00	0	7	18	10	3	s.	W. R. R. Tatman.
Laporte	Laporte	810	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. M. Walton, jr.
Plymouth	Marshall	790	8	68.8	.....	89	10	44	30	31	3.42	.....	1.23	0	7	15	12	4	sw.	J. W. Siders.
Illinois.																			
Aledo	Mercer	738	11	71.1	− 1.0	92	16	45	30	33	1.85	− 1.16	.52	0	8	7	24	0	se.	William B. Frew.
Alexander	Morgan	670	18	73.4	− 1.7	95	10†	46	30†	38	3.58	+ 0.31	1.13	0	9	13	10	8	s.	George H. Hall.
Antioch	Lake	861	10	69.4	− 0.3	94	6	43	29	41	5.73	+ 1.73	1.60	0	6	20	6	5	ne.	J. C. James.
Astoria	Fulton	650	12	71.6	− 0.9	94	10	45	31	40	2.26	− 0.96	1.28	0	6	20	7	4	s.	Edward V. Bohl.
Aurora	Kane	687	32	69.3	− 1.7	90	5†	47	29†	32	5.84	+ 2.33	2.61	0	10	14	11	6	ne.	W. Holden.

TABLE 1.—*Climatological data for August, 1911. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
Illinois—Continued.																			
Beardstown	Cass	448																	Mrs. L. M. Rice.
Bement	Piatt	700	4	73.7*		99*	10	46*	30	40*	2.45		2.22	0	6	17	7	7	n.	Rev. C. S. Adams.
Bloomington	McLean	840	20	73.6	− 0.4	95	16	45	30	35	2.46	− 0.16	1.01	0	6	16	9	6	sw.	Prof. H. N. Pearce.
Cairo	Alexander	359	33	76.6	− 0.4	98	8	57	30	27	2.82	− 0.11	0.75	0	17	8	7	16	ne.	U. S. Weather Bureau.
Carbondale	Jackson	412	6	78.0		101	9†	53	30	33	8.01		1.91	0	15	8	14	9	sw.	State Normal University.
Carlinville	Macoupin	663	21	75.0	− 0.9	100	16	47	29†	39	5.76	+ 2.77	1.85	0	12	16	13	2	se.	W. T. Eddy.
Carlyle	Clinton	470	26								3.99	+ 1.11	0.95	0	8					J. E. Rogan.
Chester	Randolph	380	5								5.96		1.32	0	15					F. A. Gollon.
Clinton	Dewitt	727	1	73.2		95	16	46	29	34	5.09		1.74	0	8	19	8	4	sw.	J. Frank Zeigler.
Coatsburg	Adams	763	19	73.4	− 1.6	95	10	46	29†	35	1.29	− 1.96	0.92	0	3	19	8	4	s.	Dr. J. R. Lambert.
Cobden	Union	656	28	76.6	− 0.9	99	8	50	30	34	6.52	+ 2.78	1.45	0	17	10	4	17	s.	John Buck.
Dakota	Stephenson	929	6	69.0		89	6†	45	29	30	8.03		1.78	0	13	9	13	9	ne.	Rev. G. W. Kerstetter.
Decatur	Macon	685	20	73.7	− 0.9	98	16	48	29†	39	4.08	+ 0.87	1.84	0	9	20	5	6	sw.	Prof. J. H. Coonradt.
Dixon	Lee	725	21	71.8	− 0.5	95	16	45	29	33	6.62	+ 3.42	1.85	0	11	13	16	2		H. U. Bardwell.
Du Quoin	Perry	459	23	76.5	− 1.2	99	9†	50	30	37	3.55	+ 0.92	1.06	0	11	11	17	3	sw.	G. H. Knetzger.
Dwight	Livingston	600	18	72.0	− 1.0	96	10†	45	29†	38	2.08	− 0.64	0.74	0	8	10	14	7	ne.	Edward O. Welch.
East St. Louis	St. Clair	418									3.62		1.27	0	9					W. McK. Brown.
Edwardsville	Madison	554	12								2.68	+ 0.45	1.15	0	8					W. H. Morgan.
Elgin	Kane	716	4	71.0		92	6†	41	30	34	4.60		1.55	0	9	7	23	1	ne.	Elgin Observatory.
Galva	Henry	842	19	72.0	− 0.7	95	16	43	29	39	2.44	− 0.90	0.71	0	7	16	6	9	se.	Prof. F. U. White.
Grafton	Jersey	422	18								3.47	+ 0.72	1.63	0	6					R. C. Goodrich.
Greenville	Bond	635	33	74.8	− 0.8	95	12†	51	29†	30	4.04	+ 1.02	1.21	0	10	14	5	12	se.	M. S. Oudyn.
Griggsville	Pike	650	26	73.7	− 1.5	95	10	49	30	27	3.68	+ 0.98	2.00	0	6	14	12	5	se.	George F. Kneeland.
Havana	Mason	475	19	75.9	− 0.1	98	10†	50	30	32	1.86	− 1.12	0.70	0	4	15	16	0	s.	F. and C. Borgelt.
Henry	Marshall	500	23	70.8	− 1.7	95	16	46	29	36	2.99	− 0.01	1.10	0	8	21	5	5	ne.	Dr. F. A. Powell.
Hillsboro	Montgomery	675	17	74.2	− 1.9	97	11†	48	29†	36	4.14	+ 0.67	1.52	0	10	17	4	10	s.	Ira L. Woodward.
Joliet	Will	541	20	70.0	− 1.8	92	6†	44	30	32	4.54	+ 1.07	1.39	0	8	20	8	3	sw.	F. M. Muhlig.
Kishwaukee	Winnebago	730	23	69.8[b]	− 1.1	93	10	43	29	32	7.04	+ 3.48	2.14	0	13	18	9	4	ne.	George Stevens.
La Grange	Cook	657	19	70.2	− 1.1	94	7	47	30	33	3.45	− 0.24	1.75	0	7	10	15	6	se.	Prof. F. E. Sanford.
La Harpe	Hancock	698	32	72.2	− 2.1	97	16	42	29	43	1.44	− 2.36	0.61	0	7	19	8	4	se.	George E. Campbell.
Lanark	Carroll	883	22	70.4	− 0.1	92	16	40	29	33	12.19	+ 8.36	5.01	0	15	21	7	3	sw.	M. N. Wertz.
La Salle	Lasalle	536	33	71.7	− 0.3	94	16	47	30	30	6.45	+ 3.59	3.27	0	10	13	14	4	ne.	U. S. Weather Bureau.
Lincoln	Logan	482	23	71.8	− 2.0	90	6†	44	31	36	2.97	+ 0.01	1.16	0	6	13	15	3	s.	Prof. C. S. Oglevee.
Loami	Sangamon	624	11								4.48	+ 0.87	1.03	0	9	16	0	15	sw.	H. C. Foster.
Manteno	Kankakee	711									4.17		1.50	0	7	21	5	5	ne.	J. F. Schmeltzer.
Martinton	Iroquois	633	24	72.8	+ 0.6	100	10†	44	30	44	2.65	− 0.90	1.10	0	8	14	10	7	sw.	Joseph H. Peltier.
Mascoutah	St. Clair	425	21	76.4	+ 0.2	101	9†	47	30†	43	3.70	+ 0.90	1.01	0	14	14	9	8	se.	George Henrich.
Minonk	Woodford	745	18	73.6	+ 0.3	95	6†	44	29	38	3.49	+ 0.31	1.67	0	8	14	11	6	s.	M. H. Pfaffle.
Monmouth	Warren	784	19	73.0	− 0.7	95	10	44	29	43	1.70	− 1.96	0.53	0	6	19	4	8	e.	Dr. J. C. Hutchison.
Morrison	Whiteside	685	17	70.0	− 1.8	90	10†	44	29	34	6.81	+ 2.89	2.18	0	13	19	10	2	s.	S. A. Maxwell.
Morrisonville	Christian	638	12	73.4	− 1.4	95	11†	45	30	37	5.77	+ 2.74	1.97	0	9	18	11	2	nw.	J. D. Lowis.
Mount Vernon	Jefferson	511	17	75.5	− 1.4	98	11†	51	30	34	3.68	+ 0.92	1.20	0	12	14	8	9	ne.	Theodore P. Stelle.
Oregon	Ogle	702	2	70.6		92	15	42	29	32	9.74		3.00	0	12	11	7	13	s.	Samuel Ray.
Ottawa	Lasalle	500	25	72.0	− 0.4	92	5†	47	30	32	6.28	+ 3.02	2.35	0	7	19	3	9	sw.	Miss Maude M. Harris.
Pana	Christian	602	25	74.0	− 0.4	96	17	43	30	30	4.65	+ 1.14	1.75	0	10	24	4	3	ne.	C. W. Sibley.
Peoria	Peoria	609	33	72.1	− 0.4	95	16	47	29	39	1.73	− 1.20	0.52	0	9	7	18	6	s.	U. S. Weather Bureau.
Pontiac	Livingston	546	9	73.2		95	6†	47	29	34	2.25		0.72	0	8	14	12	5	sw.	George Butterworth.
Quincy	Adams	481									1.29		1.01	0	4					Fred J. Brinkvetter.
Riley	McHenry	956	52	70.0	+ 0.6	91	10	46	29	27	7.35	+ 3.85	1.93	0	11	8	19	4	sw.	John West James.
Roberts	Ford	774									1.59		1.15	0	3	19	6	6	sw.	R. E. Bradbury.
Rockford	Winnebago	763	19	70.0	− 1.5	91	6†	45	29	27	8.70	+ 5.15	2.48	0	13	19	4	8		Hosmer C. Porter.
Rushville	Schuyler	670	20	73.2	− 0.9	95	10	47	29	34	1.91	− 1.24	1.20	0	4	13	12	6	se.	H. F. Dyson.
St. Charles	Kane	700	16	71.0	− 0.1	92	6	44	29†	32	7.18	+ 3.14	3.00	0	10	14	16	1	sw.	Dr. William H. Bishop.
St. Peter	Fayette	500	9	76.8	+ 0.9	104	16	49	30	41	1.93		0.65	0	6	7	18	6	se.	M. L. Lansford.
Sparta	Randolph	538	25	75.4	− 0.4	97	9†	49	29	35	3.92	+ 0.67	1.44	0	13	13	13	5	s.	James A. Caldwell.
Springfield	Sangamon	644	33	73.6	− 0.4	94	16	49	30	30	3.37	+ 0.57	1.55	0	9	11	9	11	s.	U. S. Weather Bureau.
Streator	Lasalle	626	18	71.8	− 1.3	94	16	45	29	37	4.20	+ 0.91	1.80	0	9	20	2	9	sw.	Miss Lora Sweetser.
Sullivan	Moultrie	530	11	73.8	− 0.4	100	11	48*	29†	35*	4.62	+ 1.29	1.80	0	6	10	19	2	sw.	C. A. Corbin.
Sycamore	Dekalb	855	31	70.4	+ 0.5	97	10	40	29	42	4.88	+ 1.27	1.45	0	9	16	3	12	nw.	Miss Edna J. Davis.
Tiskilwa	Bureau	798	27								4.78	+ 0.68	2.05	0	7					F. I. Smucker.
Walnut	....do	717	20	71.6	− 2.0	93	16	44	29†	29	5.64	+ 2.10	1.69	0	10	17	13	1	se.	O. C. Nussle.
Warsaw	Hancock	501	13								1.63	− 1.22	0.54	0	5					W. R. Kirkbride.
White Hall	Greene	573	3	73.3		98	10	47	31	37	5.69		1.95	0	7	19	6	6	ne.	Dr. R. A. Pritchett.
Windsor	Shelby	681	12	73.8	− 0.3	101	16	47	30	47	4.18	+ 0.55	2.48	0	7	9	15	7	s.	Herbert Rose.
Winnebago	Winnebago	900	24	71.0	+ 0.1	93	10†	43	29	35	7.58	+ 3.96	2.00	0	12	17	12	2	sw.	Frank Osborn.
Yorkville	Kendall	584	24	70.2	− 0.4	95	15	43	30	37	4.23	+ 0.92	1.45	0	7	15	12	4	w.	Herman A. Grimwood.
Zion	Carroll	938	17	69.5	− 0.6	92	16	43	29	32	9.72	+ 6.11	2.20	0	12	26	3	2	w.	Robert F. Gillogly.

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperatures are from observed readings of the dry bulb; means are computed from the observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 5, Upper Mississippi Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
North Dakota.																															
Amenia	Red		T.	.57	.83	T.		T.	.25		.10	T.			T.		.40					.15	T.		T.		.05					2.35
Bottineau	Mouse	.07		.32	1.32	.02		.21	.33		.04		.95		.10	.28	.63	.03	.04			.16	.09			.01		.18				4.78
Cando	Sheyenne			1.40	.22		.58	.03			.15			.14	.03	.48	.05					.30				.48	.35					4.24
Crosby	Mouse		.21	.26	T.	.05		T.	.23					.24		.34	.38	.03	.04			.15				T.	.35	.04					2.32
Devils Lake	Sheyenne		.06	1.31	.06		1.33	.86	.09	.12	.20			.28	.02	.69		T.		T.	.03	.02					.24	.11			.01		5.43
Donnybrook	Mouse		*	2.37		.09	.07		.15		.17			.03	.41	.12	T.		.20			.13				.11	.19	.15			.03		4.22
Dunseith	do																															
Edmore	Sheyenne	.20		1.25	.22		.03	.63			.32				.50	.50		.03				.30					.18	.27					4.43
Forman	do			.70	.30			.18	.25		.17				.80			.10				T.			.10		.10		T.				2.70
Grafton	Red	.07		.32	.78	.03		.27			.17		.03			.45							.03				.02	.51	.07		.03		2.78
Granville	Mouse			2.71	.15		.22				.33				.23	.97						.04					.35	.05			T.		5.05
Hannah	Pembina				1.79		.24	.31						.34		.51					.03	T.				T.		T.					3.22
Hansboro	Red				1.76		.02	.45	.05				.06	.11		.59	.05				.15	.18						.15				.07	3.64
Hillsboro	do			1.05	.22			.11	.16		.36				1.33	.18			.14			.07				T.	T.	.11		.07	T.	3.80
Lakota	Sheyenne	.62		1.23	.21		.33	.36	.13		.50				.18	1.00		.05		T.		.03				T.	.28	.03			T.		4.95
Langdon	Pembina																															
Larimore	Red	.73		.50	.70	.02		.09	.14		.37				.10		.57		.15			.08	.18				.02	.48			.18		4.31
Lisbon	Cheyenne	.05		.91	.35			.05	.80		.15	.05			.32		T.			.07	.03		.03		.03	.03		T.	.08				2.95
McKinney	Mouse			.20	.34	T.			.19		.50		.10	.50		.50	.12	.13			T.	.12						.40					3.10
Manfred	Sheyenne			1.35				.66	.10	.30					.45	.15						.03					.22	.07					3.33
Mayville	Red																															
Minot	Mouse	.69		1.16	1.53	T.	.20	.09		T.	.19	.05	T.	T.	.20	.30	.04						.10				.17	.11	.04				4.87
Minto	Red	.14		.72	.43		.02		.02							.78				.02		.12				*	.55	.33		.01	.04	.02	3.20
Oriska	Sheyenne		.18	1.08				.83	.32													.37			.23		.03					3.04
Park River	Red	.46		.74	.72		.10	.04			.22				.11	.48						.18					.30	.44			.02		3.81
Pembina	do	T.	T.	.02	.10	.02	.08	.32	.02					.40			.08			T.		.04	T.					T.	.10		.02	.01	1.21
Power	Sheyenne																															
Pratt	Mouse	.05		2.90			.56						.75	.85		.40												.20					5.71
Towner	do																															
University	Red	.05		.89	.14		.17				.33					.32		.14		.01		.18					.60	.26			.21		3.30
Wahpeton	do	.78		.19	1.90			.21	.29		.08				.48											.03		T.			.03		3.99
Walhalla	Pembina			1.30		.45	1.27		.01		T.			.81			T.	T.				.57	T.					.38	.03		.53	.01	5.36
Westhope	Mouse			2.45	.29	.05			.23		.18		.36	.88	.08	.40	.09	.03			.05	.10						.19					5.38
Willow City	do			1.86	.18	T.	.25	.33			.17			.80	.15	.47	.12	.10				.15						.19					4.77
Minnesota.																																
Albert Lea	Mississippi			.50			1.70	.60		.40	.70	.20	.10	.40	.10		T.											.05					4.75
Alexandria	do	1.51		.02	.88	.05		1.40	.22	.07	.11	.05			.88		T.					.07	T.			.06	.04	.25	.15		.05		5.81
Angus	Red	.07		.82			.29		.02		.10					.31				1.15		.24					.56	.20			.13	T.	3.89
Bagley	do			.55	.06				T.		.30				.44	.15						.34				T.						1.84
Beardsley	Minnesota																															
Beaulieu	Red																															
Bird Island	Minnesota			.46			.05	.45	.04	T.	.52			.02	.30		.06	T.				T.			.05		.18	.13		T.	.29		2.55
Caledonia	Mississippi	.82			.23		.82	1.28			.33	.02	T.	2.58	.04		.09	.02					.71			T.			T.				6.94
Campbell	Red	.20		.15	1.40			1.30	.32	.10	.10				.30		T.											T.					3.87
Cass Lake	Mississippi				1.50										1.00		.35					.60							.35		1.20		5.90
Collegeville	do	.03		.56	.02			.51	.02		.03				.06		.02								T.		.99		.10		.13	.01	2.48
Crookston	Red	.04	T.	.25	.52	.06		T.	.20		.20				.47		.47		.05		.12	T.	T.				.08	.25	.17		.34	.05	3.27
Detroit	do	.92		.15	.60	.07		.60	.60	.12	.18	.09			.80		.08		T.			.47	T.				T.	.15	.16			T.	4.99
Ely	Rainy	.27	.07		T.	.04		.57	T.		.02					T.		.19	T.			.40	T.				.26	.51	.04	T.	.19	T.	2.56
Fairmont (near)	Minnesota			.13			.80			.32	1.72		.30				T.		.26			T.					.12	T.			.07		3.72
Faribault	Mississippi																															
Farmington	do	.08		.26			.16	1.73	.09		.48			.35			.06					.16			T.		T.	.09			.32		3.78
Fergus Falls	Red	.01	.12	1.08	.04			1.15	.27		.08				.13	.01						.03			.03		.01	T.		T.			2.96
Fort Ripley	Mississippi	.55			.50			.18			T.	.20			.75							.45						.50				.65	3.78
Fosston	Red	.62		.42	.14						.46				.20	.19		.02				.31					.07	.08		.02	.08		2.61
Fram	do	.45		.08	.27	.01	.28	T.	T.		.20			T.	T.	.28				T.		.47			T.		.68	.29	.01		.13	T.	3.15
Glencoe	Mississippi			.50			1.00				.50			.75	.15																.50		3.40
Grand Meadow	do	.38		.22	.14		2.99	.94		.22	.84	.11	.13	6.41	.07		.08	T.				.78									.03		13.34
Gull Lake Dam	do	1.00		.41	.04			.05			.13				.71		.06					.22			T.			.32			.58		3.52
Hallock	Red			.23	.25		.66	.55			.03			.12		.35					.05					.12	.40			.05	.05	2.86
Halstad	do	.05		.30	1.10	.13			.14		.20	.03		.83			.19		.06			.13						.04	.06		.04		3.30
Hinckley	St. Croix	.55		.10				.56														.87						.83			.44		3.35
International Falls	Rainy	3.27		T.	.10	T.			.52						.75		.10					.58				.40	.48		.23				6.43
Itasca State Park	Mississippi	1.49	T.	.26	.24	T.		.87			.42				1.35	.63	.02					.78					.11	.06		.01		.14	6.38
Lake Crystal	Minnesota			.47				.63	1.46		.31	.96			.65		.14											.07			.19		4.88
Leech Lake Dam	Mississippi	2.30			.26				.14			.36				.29						1.05					.56	.12			.22		5.30
Littlefork	Rainy	3.27			.21				.20	.41					.48	.04		.13				.86	.02				.30	.42	.07		.01		6.42
Long Prairie	Mississippi	1.20		.50					.52			.32			.12							.25					.70			.30	.20		4.11
Lynd	Minnesota			.71			.20		.09	.27	.17	T.		T.	2.55		.18								.06		.11				.18		4.52
Mankato	do	.63			.28		.27	1.50		.17	.76			.15	.69													.10			.13		4.68
Milaca	Mississippi	.38	.44		.08		.03	.60	.04		.02				.68	.01	.04								T.		.54	.70	.08	.01	.38		4.03
Milan	Minnesota			.89				.24	.16	.16	.04				.16		T.	T.							.02		.74				.54		2.95
Minneapolis	Mississippi			.19	.03		.29	.41	T.		.41			T.	.66	.49	T.					.61		T.	.03		.12				.39	.02	3.65
Montevideo	Minnesota	T.		.03	.72			.16		.11	.04				.05			.02	.01								.02	.79			.25		2.20
Moorhead	Red		.14	1.09	.02			T.	.20	.06	.22				.68	.28						.20			.02		.03	.02					2.96
Mora	St. Croix	.53		.18	.07		.01	.49			.13	.02			.64							.08			.01		.20	.61	.11	.01	.47		3.56
Morris	Minnesota		T.	.98	T.		T.	.08	.08	T.	.05				.64	.46		T.							.17		.38			T.	T.		2.84
New London	Mississippi			.62			T.	.36				.04					.13									T.		.14	.32	.43	.24		2.28
New Richland	Minnesota	T.		.25			1.16	.40		.04	.49	.09	T.	2.11	.38		T.	T.				.09			T.		T.						5.01
New Ulm	do	.24			.32		.04	1.52	T.	.08	.40	.02	T.	T.	1.10		.50	.07	.04				T.		T.	.06		.25	T.		.26		4.90
Osakis	Mississippi	.60		.52			T.	.83	.07		.08											.08			.04		.37	.10	.05	T.	.05		2.79
Park Rapids	do	.86		.35	.51	.12		.85	.78	.02	.25	.10		.01	.26		.05					.83	.03					.75	.01		.05		5.83
Pine River Dam	do	1.45		.25							.25											.45					.15			.10	.13		2.78
Pokegama Falls	do	.95		T.	.13			.22	T.		.35					.09	T.	T.				1.46				.09	.13	1.01	.06	T.	.14		4.63
Red Lake	Red	.95		.35				.03			.13					.15						.10					.18		.16				2.05
Red Wing	Mississippi	.20			.08		.12	.98	.04		.26	.80		.02	1.60	.04	.32	.05												T.		.12	4.63
Redwood Falls	Minnesota			.50			.09	.80	.05		.47	T.		.11	1.02		.12	T.							.06		.19	.08			.15		3.64
Reeds Landing	Mississippi	.15			.37		.29	.90			.34	.60		.80	1.80		.09	.03					.21									.13	5.71
Rochester	do	.32			.23		1.30	1.17			.51			1.40									.90									.25	6.08
Roseau	Red	.56			.25		.26	.16						3.00		.17						.10					.15	.47			.40		5.52
St. Charles	Mississippi	.74			1.23		2.11	.62		.05	.30		.02	2.15	.33			.05					.97									.21	8.78
St. Cloud	do			.63	.03		.20	.90	.02		.09				.12		.07		T.								.15	.84	.20	T.	.31	T.	3.56
St. Paul	do	.02		.10	.02		.34	2.56		T.	.39			T.	.68	.34	.02					.46			.02		.09				.44	.02	5.50
St. Peter	Minnesota	.21		.31			.58	.93			.40			.10	.66		.10														.10		3.39
Sandy Lake Dam	Mississippi	.33			.18			.30			.27					T.						.72						.38			.25		2.43
State Sanatorium	do	1.95	.01	.10	.17			.40			.31				.02	.60						.56					.38	.03		.04	.06		4.63
Stillwater	St. Croix	.25	T.		.10		.02	1.70	.02		T.	.41			.43	.03	.32						.85		.02			.06			.02	.33	5.06
Taylors Falls	do			T.			.30	1.80								.18						.40					.14			.42		3.24
Warroad	Rainy	.65			.45	.05	.19		.05		.05					.10						.15			T.		.15				.30		2.14

TABLE 2.—*Daily precipitation for August, 1911. District No. 5*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota—Contd.																																	
West Concord	Mississippi																																
Winnebago	Minnesota	.70			.13		.27	.68		.20	.60	.02	.30	.15	.27	.25	.04	.01	.04							.02		.17			.02		3.87
Winnibigoshish	Mississippi	3.74			.18			T.			.42					.10	.07					.74				.46	.26	.04	T.	.22		6.23
Winona	do	.05		.10	.02		1.09	.61	T.	T.	.38		T.	.71	.44		.04					.22	T.							.02	.08	3.76
Worthington	Des Moines	.03		.09	.15		.36	1.57		.11	2.98	.08	.32	.02	1.47			.06								.02		.14			.08		7.48
Zumbrota	Mississippi																																
South Dakota.																																	
Milbank ‖	Minnesota			.54	.84		.09	.22		T.	.33				.14		T.		.06						T.	.14	.57	.15					3.08
Wisconsin.																																	
Antigo	Wisconsin	.87						1.46			.28				.20		.24					.02	.57			T.				.12	T.	3.76
Barron	Chippewa	T.		T.			T.	.76			.17			T.	.91		T.	T.				.77			T.		T.			.18		2.79
Beloit	Rock			.10		.84	.36			.90	.64	.30	2.10		.35		.42					.90					.80					7.71
Big St. Germain Dam.	Wisconsin	.15	T.		.15			1.42			.26				T.		.05					1.76	T.			.20				.26	.27	4.52
Brodhead	Rock	.30			.44	.06		.06			.14	.67	.48	1.75		.15	.71						.53					.50					5.79
Burnett	do	.42			.06		.64	T.		.03	.14	.01	.02	.18	.50	.40	.08	T.					.87			T.					T.	T.	3.35
Cottage Grove	do	.23			.22	T.		.07		.03	.20	.22		2.39		.37	.03						.23			T.						.02	4.01
Darlington	do				1.40	T.		.40			.60	1.20	.70	2.65		1.00							.50			T.							8.45
Deerskin Dam	Wisconsin	.17	T.		T.		T.	1.32			.06				T.	.30			.07			1.59					.60			.24	.30	4.56
Delavan	Rock				.01	.15				.05	1.01		.50	1.42	.47		.05					.06				T.		1.40					5.12
Dodgeville	do																																
Downing	Chippewa	T.		.12			.10	.32			.55																		.15		.20		1.44
Eau Claire	do	.06		T.	.05		.22	.52			.65				.48		.06					.36					T.			.09	.10	2.59
Grand Rapids ‖	Wisconsin	.51			T.		.07	.45	.02		.01	1.24		.02		.34	.03	.51					.91			T.	T.	T.					4.11
Grantsburg	St. Croix	.20		T.			T.	.60			.03					.30						.46				T.	.05	.10		.35		2.09
Hancock	Wisconsin	.80			.03		T.	.35			1.65	.02		.05	.23	T.	.20						.45								T.	.03	3.81
Hatfield	Black	.11		.10			.23	1.80			1.00			.03	.42		.15					.83									.06	.04	4.77
Hayward	St. Croix	.35	T.	T.				1.10			.15						.08				.07	.85			T.		.18			.23		3.01
Hillsboro	Wisconsin	.10			.25	.05	.18	.55		.20	.30	T.	T.	1.40	.35		.15					.25			T.	T.		T.		T.		3.78
Koepenick	do	1.05						1.10		.10	.20				.40		.20		.40			1.40								.20		5.05
Lac du Flambeau	Chippewa	.02			11			.91		.06	.12				.06		.33		T.			1.74				T.	.26			.46		4.07
La Crosse	Mississippi	.01		.10		T.	.44	.79		T.	.32	.03	.08	1.14	T.		.05					.51			T.	T.	T.			.01	.01	3.49
Lake Mills	Rock	.34			.10			.02			.05	.12	.10	1.02	2.03		.02						.37				T.	.12			T.	4.29
Lancaster	Mississippi			1.89		.04		.67		.20	.14	.55	.99	2.86	.98		.03						.47			.02						8.84
Long Lake	Wisconsin	.39			.03		T	1.32	.04		.18						.41		.12			1.62				.10				.35	.34	4.90
Madison	Rock	.07		.28	.07	T.		.13		.10	.16	.07	.01	1.93	.56		.07					.17				T.		T.		T.	T.	3.78
Mather ‖	Wisconsin	.71			.09		.07	.66	T.		.04	.51		.34	.06	.15	.02	T.					.75						T.			T.	3.40
Mauston	do	.80			.15		.20	.45		.62	.38		.06	.85	.15		.05																3.71
Meadow Valley	do	.39			.03		.30	.72			1.00			.20	.18		.22						.58								.03		3.65
Medford	Black	.33					.13	.65			.45				.38							.80									.10		2.84
Merrill	Wisconsin	.60						.10			.35				.28							.68	.38								.15		2.54
Minocqua	do	.23			.20			.80		.09	.16					.05	.40					1.55				.09					.20	.26	4.03
Mondovi	Mississippi	T.		.04			.40	.74			.87	.01		.11	1.08	.01	.82					.29									.10	.15	4.62
Mount Horeb	Rock	.15		1.05	.30			.22		.02	.23	.16	.38	1.88	.53								.13			T.					T.		5.05
Muscoda ‖	Wisconsin	.17		.94			.18	.44			.30		.01	1.90	.32	.24							.37										4.87
Neillsville	Black							1.12			1.04				.75		.06						.82									.11	3.90
New Richmond	St. Croix	.27		.10			.28	.97				.04			.47		.16					.93			.05		.07			.38		3.72
Osceola ‖	do	.38		.06			.34				.03				.12	.15									T.		.12			.33		1.53
Park Falls	Chippewa	.09	.02		.11		T.	.74	.03		.16				T.		.71		.01		.02	1.58	T.				.01	.09		.27		3.84
Portage	Wisconsin	.56			.11		T.	.33		.01	.32	T.	.02	.49	.55		.15						.30			T.					T.		2.84
Port Edwards	do	.60						.68	T.		1.20			T.	.38		.16					.04	.75						.03		.04	.04	3.92
Prairie du Chien ‖	Mississippi	.68			.82		T.	.48			.20	.54	T.	4.00	.66				.16				.42			.04							8.00
Prentice	Chippewa	T.			.03		.21	.25			.10				.10		.24					.78				T.				T.		1.71
Rhinelander	Wisconsin	.32						1.28	.03	.08	.09				.11		.08	.05				.87				.02				.25	.11	3.29
Sauk City	do							.75	.61		.51			1.76	1.03							.17										4.83
Shullsburg	Mississippi	.11		.06	1.06	.03		.27		.07	.60	2.17	1.24	1.56	1.51		1.15	.01					.23		.05								10.12
Solon Springs	St. Croix							.80			.20					T.					T.	1.00					.20			.20		2.40
Spooner	do	.05		T.				.50			.08				.10		.14				T.	1.26			T.				T.	.39		2.52
Stanley	Chippewa	T.			T.		T.	.90			.45				.45							.62					T.			T.		2.42
Stevens Point	Wisconsin							1.23			1.10				1.76		.10					T.	.84				T.					5.03
Sugar Camp Dam	do	2.10	.22	.02	.08		T.	1.75		T.	.23						.14	.03				1.61			T.		.22			.25	.42	7.07
Twin Lakes Dam	do	2.28						1.65								.10		.30				1.15							.30	.65		6.43
Valley Junction	do					.49	.37	.76			.59			.74	.44								.86						.07	.04	.11	4.47
Viroqua	Mississippi	.13		.05	.28	.01	.21	.61		T.	.27	.02	.03	1.62	.02		.39					T.	.58		T.					T.		4.22
Vudesare	Wisconsin	.36			T.				1.97		.30				T.		T.	1.00		T.		1.35								1.00		5.98
Watertown ‖	Rock				.09							.10	.04	.44	.08	1.05		.05					.18						14			2.17
Waukesha	Fox	.62									.02	.30	.17	.35	.50		T.						.10						.27			T.	2.33
Wausau	Wisconsin	.85			.05			.83			.38				.40		.03					.11	.87			T.						13	3.65
Weyerhaeuser	Chippewa	.15			.07		T.	.22			.19				.34				.05			.82			.05		.12			.12		2.13
Whitehall	Mississippi	.20		T.			1.10	T.			.70			.20	.70		.40					.70								T.		4.00
Iowa.																																	
Albia ‖	Des Moines	.07			.22			.74				.02						.02															1.07
Algona	do			T.		.08		.40		T.	.13	.12	.20		T.		T.		.10			T.			T.	T.		.22			.18		1.43
Alta ‖	Raccoon			.03	.11			1.05			.12	.02	.78						.34				T.			T.		.20	.05		.03	.06	2.79
Amana	Iowa	.07		.71		T.		.88		1.13	.32	.26	T.			.07	T.					T.	.14			T.							3.58
Ames	Skunk	.23		.02		.20		.50		.42	.28		.52				.64					.40					.07					3.28
Baxter	do	.53		.09		.01		.62		.28	.31	T.	.16				.05														T.		2.05
Belle Plaine	Iowa	.12		.09				.50		.70	.55	.38					.30						.07			.05							2.76
Belmond	do	.62		.03		.20		.75		.10	.28	.48	.20	.05	.02		T.		.25			.27			T.		.26			.05		3.56
Bloomfield	Mississippi			.26				.48										39															1.13
Bonaparte	Des Moines			.42	.19			.43								.53											.29	.61					2.47
Boone ‖	do	.38			.02	.21	T.	.67			.55	.02	.26	.17					.09				.32				.05	T.			T.		2.74
Britt	Iowa			.04		.16		.88		.12	.04	.09	.37	T.					.28			.15					.29			.13			2.55
Buckingham	Cedar			.10		T.		.70		1.11	.89			.49	.32		T.		.09			.07				.02							3.79
Burlington ‖	Mississippi	.80			.30	.30		.62			.06					.63			.28				.03		.20			.63					3.85
Carroll ‖	Raccoon		T.				1.04			T.	.93	.66						.63								.21	T.						3.47
Cedar Rapids ‖	Cedar	1.47			.66			.48			1.32	.55	.06	.25				T.					.21			T.							5.00
Charles City	do				.01		.42	.15	1.09		.01	.11	.01	.29	2.20							.17				.13			.01		.02		4.62
Clear Lake	do	1.20					.35	.98			.20		.42	.55	.45							.10				.20		.06					4.51
Clinton	Mississippi			.61			.15				.70	.36	1.10	1.95	.03	.11	.10						.48			.04		.10					5.73
Columbus Junction	Iowa	.05		.69				.45			.88	.15	.05				.70						.28		.05			.52					3.82
Davenport	Mississippi	.12		.25	T.	1.80		.08	T.	.80	.13	.80	.28		.13	T.			T.				.32			.01		.20					4.92
Decorah	do	.49		.11		.49	.55	.56		.36	1.12	.10	.23	3.26			.15	T.				.65				.10				T.			8.17
Delaware	do	.55		.90				.72		.17	.60	1.17	1.10	1.30	.06		.52						.50			.05							7.64
Des Moines	Des Moines	T.		.04		.01	1.41	.01	T.			.06	.02				.21		.03			T.				T.		.03					1.82
Dubuque	Mississippi	.01		.83		.01		.41		.18	3.36	1.06	.53	1.27	.33		.35					.37				.03					T.		8.74

TABLE 2.—*Daily precipitation for August, 1911. District No. 5*—Continued.

Stations.	Watersheds.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Iowa—Continued.																																	
Earlham	Raccoon	.20		.10				2.25				T.	.24					T.	.17			.38						.15					3.49
Elkader	Mississippi			.40		.05	.10		.25	.20	1.15	.50	.65	1.50	.06		.10						.30			.15					T.		5.41
Elma	Wapsipinic'n			1.30	.05	.09	.69	1.02			.70	.03	.38	2.20	T.		.13					1.00				.05		T.	.05		.07		7.76
Estherville ‖	Des Moines				.26		1.08	.60		T.	.62	.10	.40	T.	.50	T.			.25							.15		.30			T.	.05	4.31
Fairfield	Skunk							.45																									0.45
Fayette	Mississippi			.45		.12		.60		1.40	.60		1.20	1.68	T.		T.					.15				.12							6.32
Forest City ‖	Cedar			.03		.03	.30	.66			.20	.10	.25	.03	T.	.10	T.		.05				.30			T.		.27	T.			.08	2.40
Fort Dodge ‖	Des Moines	T.						.60			.03	.30	.50			.15							.55			.04		.30	.04			T.	2.51
Fort Madison	Mississippi			.10	.65			.57		.29					.84			.15								T.		T.					2.60
Gilman	Iowa	.07		.13		T.		1.14		.52	.41	.14	.19					T.	.33				.06										2.99
Grand Meadow	Mississippi	.60		.88		T.	.08	.58		.27	.57	.24	.42	1.85			.09					.42				.11			.02		.01	T.	6.14
Grinnell	Iowa	.23		.14		.03		1.01		.59	.50	.10					.28	.05				.10	.06										3.09
Grundy Center	Cedar	.60		.12		.10		.42		1.70	.58	1.01	.42	.02		.88		.03								T.							5.88
Guthrie Center	Raccoon	.13		.11		T.		.76					.12					T.	.16			T.		T.		T.		.22					1.50
Hampton	Cedar			.03			.55			.88	.50		.15	.45	.73			.10				.15			.04								3.58
Humboldt	Des Moines			.03	.13			.68		.20	.27		.34		T.				.10			.10					.25		.02				2.12
Independence	Wapsipini'n	.63		.19		.11		.75		1.10	.53	.70	.40	.92				.33	.10							.11							5.87
Indianola	Des Moines	.41		.01		T.		1.65		.42		T.	.17						.10				T.					.04					2.80
Iowa City ‖	Iowa	.91			.87			.60			1.13	.10	.23	.05		.36										.02							4.27
Iowa Falls ‖	do	.41			.04	.16	.07	.42			1.13	.58	.33	.07	T.	.08		T.	.10				.21			T.		T.	T.			T.	3.60
Jefferson	Racoon	.45						.65				.15	.50															.15			.06		1.96
Keokuk	Mississippi		.30					.49		T.			.03			.26		.23						.07	.02	T.		.34					1.74
Keosauqua ‖	Des Moines	.13			.61			.60						T.		T.			.01	T.			T.		T.				.08				1.43
Knoxville	do	T.		.18		T.		.93		T.			.08					.29					T.				T.						1.48
Lacona	do	.14		.38		T.		.80			.01		.24				T.	.20	.01			.01	.20			T.		.10					2.09
Le Claire ‖	Mississippi	.63	T.		.51	T.	.20	.18		T.	.87	.56	2.90	.12		.01		T.					.66			.01	.02		.02				6.09
Marshalltown ‖	Iowa	.20			.15	.01		.68			.70	.06	.35	.12				.02					.05			.03			T.			T.	2.37
Mason City	Cedar	1.26		T.			.38	.40		.06	.26	.02	.29	1.25					.16			.16									.17		4.41
Mount Pleasant	Skunk			.97	.06			.48		.07				T.		.12		.02					T.			T.		.09	.42				2.23
Muscatine ‖	Mississippi	.74			.14		.03	.10		T.	.58	.05	.03	.02		.97							.17			.04			.24				3.11
New Hampton	Wapsipini'n	.56		.30		.23	.03				.25	.12	.30	2.62								.58	.08			.20		T.					5.27
Northwood	Cedar			.15		.78	.04	1.13		.23	.63		.35	.43			.18					T.					.08			T.			4.00
Olin	Wapsipini'n			.30				.63		1.30	.58	.42	.28			1.05		.10					.08										4.74
Osage	Cedar	1.27		T.		.22	.73	.32		.35	.78	.06	.27	2.10	T.							.14								T.	T.		5.94
Oskaloosa	Des Moines	.02		.17			.60						T.				T.					.04											0.83
Ottumwa	do			.18		.05		.42																		T.							0.65
Pella	do			.06	.01			.85				.01				.02	.02					.12			T.		T.						1.09
Perry	Raccoon	.90		T.		.18		.80				.13	.25				.20	.03	.08			.04					.07	T.					2.68
Plover	Des Moines			.11		.05		.60		.07		.01	.30						.07			T.				.40			.05			1.66
Pocahontas	do			.15			.62			.02	T.		.31		.03											.33	.05					1.51
Ridgeway	Mississippi			.98		.03	2.74			.04	1.15	.10	.35	2.41			.10	.01				1.25			.01	.07	.05	.12			.06		9.47
Rockwell City	Raccoon			.45				.95			.65	.60	.75				T.		.30		T.	T.			T.				.45				4.15
Sac City	do							.81		.08	T.	.43	.92		T.				1.33			T.					.27			.09			3.93
St. Charles	Des Moines	.32		.02				1.32	.22	.07	.09	.07	.09				.07	.03	.03			.09					.15						2.57
Sigourney	Skunk			.20		T.		.40		T.		T.	.06					T.				T.	.08			T.							0.74
Stockport	do			1.09	.01			.77														T.					.04	.10				2.01
Storm Lake	Raccoon			.15		.04	T.	.33		.04	.02	1.05					T.		.15				.01				.01	.23			.08		2.11
Tipton	Cedar			.50				.55		.80	.35	.45	.62			.74							.44										4.45
Toledo	Iowa	.07		.27		T.		.42		.48	.40	.05	.05																				1.74
Wapello	do			.09	T.		.42			.55	.07		.17			1.21						.15							T.	.07			2.73
Washington	Skunk	.04		.82				.47		.14	.02	.07										.03				.01							1.60
Waterloo ‖	Cedar	1.53			.03		.04	.82			2.01	.51	.16	.35	.58			.20	.01				.02			.07			T.				6.33
Waukee	Raccoon	.38		.03				1.06				.01	.14				T.	T.	.04	T.		.10	T.						.10				1.86
Waverly	Cedar	1.20		.08		.28	.65	T.		.35	.27	.58	.97	1.23					.40							.12							6.13
Webster City	Des Moines	.54		.03		T.		.53		.09	.21	.47						T.			T.				T.		.21		T.				2.08
West Bend	do			T.				.75		.31	.08	.14	.30		.03							T.				.03		.19			.08		1.91
Whitten	Iowa	.05		.11		.09		.65		1.00	.63	1.70	.93	.07			.32					T.									T.		5.55
Winterset	Des Moines	.40		.06				1.47	T.	.13		.09	.09				T.	.48	.42			.11						1.35					3.60
Missouri.																																	
Gorin	Mississippi			.19				.66										.07										.47					1.39
Hannibal	do	T.		T.				1.04		T.								T.	.03			T.		.29	.07			.03					1.46
Louisiana	do	.65		.01				.95		.04												.06	T.	1.01	.75								3.47
Mexico ‖	do	.67			.02			.36	.01										.27	.04	.03		.45		.88			.01					2.74
Steffenville	do			T.				1.10									T.		T.		T.		.01	.15				.65					1.91
Sublett	do			.35				1.87										T.			T.												2.22
Vandalia	do							1.15																	1.20								2.35
Warrenton ‖	do	.70						.87	.03										.27	1.16	.06		.48	.35	1.96	.01		T.					5.89
Indiana.																																	
Collegeville	Iroquois	T.					.33						.32	.35	.66		.20		T.				T.		1.50								3.36
Knox	Kankakee	1.00	.21										.17	.77	.06		.56		T.				.02		T.								2.79
Laporte	do																																
Plymouth	do		.53	.83									.01	.71	.03		.08						T.		1.23								3.42
Illinois.																																	
Aledo	Mississippi	.10		.46	.17			.46		.52	.01	.03				T.	T.						.05					T.	.05				1.85
Alexander	Illinois	.86		.51	.01			.90	.10	.06	.01				T.									.37	.76								3.58
Antioch	do	1.10				T.						1.00	.60	1.60				.65										.78					5.73
Astoria	do	.42		.05	.03			1.28		T.			.05						T.					T.	.43								2.26
Aurora	do	1.68			.05						.10	1.90	.71	.85		.30	*	.09							16								5.84
Beardstown	do																																
Bement	Mississippi							.13			.05													19	2.03	.02			.03				2.45
Bloomington	Illinois				1.01		.39			.35	.02	.04						T.					T.		.75								2.46
Cairo	Mississippi	.57	.01		.04	.04	T.	.01	.59						.04	.02	.01		.15		T.		.05		.03	.65	.10	.01	.04	.46				2.82
Carbondale	do	1.01	.04		1.73	.18	.08	.24	T.						T.	.07				.08	.21		T.	.06	.37	.22	.89		1.91	.92				8.01
Carlinville	Illinois	.31		.30	T.	.03	.12	.77	1.85		.19					.06					.04				45	.30			.34					5.76
Carlyle	Mississippi				.95		.69	.35								.60			.15		.11					.89		.25						3.99
Chester ‖	do	.04	.54		.96	.12	T.		.16	.14	.08					T.	.04		1.32	.08	.42		.14		.46	1.14			.32				5.96
Clinton	Illinois	.57			.03			.15	T.	T.	.63	T.				1.74		T.					T.	.20	1.53				.24				5.09
Coatsburg	Mississippi	.05						.92		.32								T.																1.29
Cobden	do	1.45	.05	.03	1.35	.08	.37	.06	.25					.07	.05			T.		.32		T.	.08	.03	.12	1.08		.82	.31					6.52
Dakota	do	.25		T.	.60	.52		.14		T.	.29	.93	1.05	1.78		.37	.82	.10					.33		.57	1.84	.08			.85				8.03
Decatur ‖	Illinois	.36		.15				.50		.01	.12		T.														.45							4.08
Dixon ‖	Mississippi	.86			.83			.28			.20	1.85	1.40	.35		.18		.05					.42			T.			.20					6.62
Du Quoin	do	1.06		.72	.11		.10	.02	T.									T.		.02		.08		.10	.83	.29		.22					3.55
Dwight	Illinois	.63			.02	.01		.03		.04	T.	.18	.74				T.						T.		.43								2.08
East St. Louis ‖	Mississippi	.43			.63			.02	1.27							.04				.02			.06		.84				.31				3.62
Edwardsville	do	.13		.60	.03			.14						.38						.08					1.15				.17				2.68

TABLE 2.—*Daily precipitation for August, 1911. District No. 5*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Illinois—Continued.																																	
Elgin	Illinois	1.42			T.	.09					.02	1.55	.95	.42	.02	.05		.08					T.									4.60
Galva ‡ ‖	do	.42			.43		T.	.50			.71	.05		T.									.11		.22							2.44
Grafton ‖ ‖	Mississippi	.24			.40			.47	.12														T.	.61	1.63							3.47
Greenville	do	.42		.58				.57	.56	.08	.28			T.	.05			.04						.25	1.21							4.04
Griggsville	Illinois	.30		.26				.29	2.00	T.										T.				.19	.64				T.			3.68
Havana	do	.67		T.				.70			.10														.39							1.86
Henry	do	1.10			.14			.37		.31	.30		.32										.15		.30							2.99
Hillsboro ‖ ‖	Mississippi	.10			.45		.07	.68	.85		.15	.12			.15	.05									1.52				T.			4.14
Joliet	Illinois	1.00				T.					.03	1.11	1.39	.50	.03		.03								.45				T.			4.54
Kishwaukee	Mississippi	.66		.48		.07		.02		T.	.06	2.14	1.24	1.11	.50	.20	.21						.15						.20			7.04
La Grange	Illinois										.05	1.10	1.75	.18	.08	T.	.09	T.							.20							3.45
La Harpe	do	.07		.11				.61		.38						.03		.04						T.	.20				T.			1.44
Lanark	Mississippi	.12		1.59	.02			.37		.03	.20	5.01	1.43	1.86		.22	.92	.10					.20			T.	T.	T.	.11		T.	.01	12.19
La Salle	Illinois	.67		.19		T.		.33		.39	.05	1.26	3.18					T.					.11	.16	.11							6.45
Lincoln	do	1.16		.05				.43		.42	T.												T.	.04	.87							2.97
Loami	do	.87		.32	T.			1.03	.07	.21	.06				T.								T.	1.00	.83				.09			4.48
Manteno	do	.41			.04						T.	.41	1.50	.54		.68									.59							4.17
Martinton ‖	do	.57	T.		.02					T.	.40	.32	.07		.02									1.10	.15							2.65
Mascoutah	Mississippi	1.01		.85	.06			.12	.48		.31			.07	.03	.04				.06		.03	.05		.56	.03						3.70
Minonk	Illinois	1.67			.20			.15		.50	.02		.45										.08	.42								3.49
Monmouth	Mississippi	.04		.53				.40		.40												.08			.25							1.70
Morrison	do	.36		.01	.94	T.	T.	.20		.36	.18	1.85	2.18	.07		.06	T.	.13					.40			T.			.01			6.81
Morrisonville	Illinois	.06		.73	.03			.89	T.	.44	.39									T.				.60	1.97				.66			5.77
Mount Vernon ‖	Mississippi	.50	.04		.84	.04		.48	.11						.06	T.			.02	.10					.12	1.20			.17			3.68
Oregon	do	.63			.85			.70		.10	.10	3.00	1.10	1.75		.20		.30					.51						.50			9.74
Ottawa	Illinois	2.35						.24		.15		1.10	2.00			.13									.31							6.28
Pana	Mississippi	.48			.48		T.	.45		.06	.35				.06							.02	T.	.90	1.75	T.			.10			4.65
Peoria	Illinois	.41		.01	.01			.30		.52	T.	T.	.04					.08					T.	.13	.23							1.73
Pontiac	do	.62			.11			.12		.18	.03	.02	.72					T.							.45							2.25
Quincy	Mississippi			.04			1.01	T.										.01	.23													1.29
Riley	do	1.00			.03	.36		T.			.03	1.93	1.56	1.84		.18	.17	T.					.06						.19			7.35
Roberts	Illinois					.06	T.		T.			T.	.38										T.		1.15							1.59
Rockford ‖	Mississippi	.69			.50		.02	.01			.09	1.20	.19	2.31	.74	.44		1.00					.67						.84		T.	8.70
Rushville	Illinois	.13		.12				1.20							T.									.46								1.91
St. Charles	do	2.00				.20		T.			.02	2.00	1.72	1.00	T.	.04		.12					.03		.05	T.			T.			7.18
St. Peter	Mississippi	.25			.65			.23		T.	T.			T.	.02			.15							.63							1.93
Sparta	do	.25	.01	.29	.47	T.		.21	.82					.05		.05		T.				.10	T.	.09	1.44	.05			.09			3.92
Springfield	Illinois			.16	T.			.92		.45	.15		.03							T.		.01	T.	.83	.72				.10			3.37
Streator ‖	do	1.80			.05			.10			.30	.10	1.40	.10		.05							T.		.30							4.20
Sullivan	Mississippi	1.11				.15		.35																1.13	1.80				.08			4.62
Sycamore ‖	do	.97			.12			T.			.07	1.45	.82		1.00	.20		.15					.10		T.							4.88
Tiskilwa	Illinois				.75			.75		.40		.30	2.05									.10			.37							4.78
Walnut	Mississippi	.83			.81	.03		.20		.42	.03	1.22	1.69										.37		.04							5.64
Warsaw ‖	do			.37				.54					T.			.14								.27				.31			1.62
White Hall	Illinois	1.08		.17	T.			.44	1.12	T.										T.				1.11	.84				.93			5.69
Windsor	Mississippi	.25			T.	T.	.53	.50		T.	.10							.12						.20	2.48							4.18
Winnebago	do	.40			.80	T.		.08			.15	2.00	1.15	1.60	.25	.16	.25						.19						.55			7.58
Yorkville	Illinois	1.45			T.	T.					.01	1.20	1.15	.35		.05		.02														4.23
Zion	Mississippi			1.65				.40		.45	.05	2.20	1.75	.53	.70		.94	.05					.46						.54			2.97

* Precipitation included in that of the next measurement.
† Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 5, Upper Mississippi Valley.*

Date.	North Dakota.										Minnesota.															
	Bottineau.§§		Devils Lake.		Lisbon.§§		Minot.§§		Pembina.§§		Collegeville.		Crookston.§§		Grand Meadow.		Montevideo.§§		Moorhead.		New Ulm.§§		Pine River Dam.		St. Paul.		Winnibigoshish.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	80	44	77	50	75	55	79	47	80	48	71	58	67	57	74	57	75	57	74	55	74	60	61	56	71	58	67	54
2....	79	52	75	55	62	45	75	54	85	48	76	53	77	47	80	47	78	50	64	49	78	50	75	51	78	54	72	52
3....	60	55	60	55	63	54	60	55	78	52	71	58	70	58	76	55	74	57	62	59	78	55	71	53	72	60	70	59
4....	69	54	69	57	76	54	71	55	66	55	72	57	70	55	82	60	78	55	74	54	76	59	71	51	77	60	73	58
5....	77	48	75	51	85	47	79	49	78	52	80	56	77	54	85	56	81	53	80	54	85	54	76	56	81	59	79	59
6....	66	54	76	54	81	54	70	56	80	52	78	60	80	60	80	61	76	54	80	60	84	61	75	55	72	63	76	54
7....	75	55	74	59	83	64	79	50	78	58	75	62	75	60	77	61	81	60	80	62	79	62	74	60	73	60	75	58
8....	70	57	75	54	87	56	73	56	80	58	84	59	83	60	84	55	88	56	86	58	85	59	81	51	84	58	79	56
9....	65	44	66	46	71	54	63	51	75	48	79	59	70	50	82	61	75	60	70	53	80	64	78	50	75	64	78	54
10....	70	51	70	53	72	55	69	53	78	50	71	56	69	54	77	61	73	57	69	51	70	60	63	53	65	57	68	54
11....	72	47	73	49	77	48	75	48	74	47	70	50	76	49	64	55	72	51	77	46	67	56	73	41	71	53	75	48
12....	70	53	75	57	86	50	81	58	78	53	76	57	76	54	79	56	78	54	80	56	78	58	78	51	73	57	78	53
13....	88	52	87	61	91	61	89	61	88	54	81	62	89	60	82	62	87	60	90	62	85	58	82	60	79	65	81	61
14....	89	58	87	62	92	60	88	62	90	62	86	65	87	65	84	67	91	64	90	65	86	64	85	66	85	66	87	65
15....	80	55	73	56	89	59	79	55	76	50	89	67	73	61	90	60	92	65	79	60	92	65	86	60	90	64	81	62
16....	72	53	72	52	87	61	74	54	77	53	90	64	76	57	83	59	85	65	80	60	77	69	80	58	83	67	82	59
17....	75	48	75	50	91	46	78	52	75	48	89	59	75	51	82	58	82	55	80	52	82	59	78	49	78	60	75	54
18....	82	50	78	50	88	55	84	53	80	42	77	54	75	48	79	56	83	63	80	50	82	59	74	45	75	57	77	48
19....	85	53	84	60	79	62	84	58	88	48	80	55	85	53	80	48	85	55	86	52	86	55	79	53	77	56	81	50
20....	82	59	83	56	78	47	86	56	86	46	84	59	86	58	82	52	86	56	88	58	84	66	87	61	83	57	88	58
21....	62	54	69	44	79	50	62	52	68	58	80	68	75	65	77	60	84	67	76	48	79	69	77	61	78	63	81	60
22....	64	35	65	38	72	47	68	35	68	38	74	47	65	45	71	45	72	44	68	44	65	48	70	47	66	49	64	46
23....	69	36	69	44	79	33	70	39	72	42	73	48	73	40	68	49	73	46	73	40	71	47	70	44	72	47	73	47
24....	74	41	74	50	73	44	76	41	74	40	72	55	75	47	75	45	63	47	69	52	68	50	68	40	70	57	67	50
25....	67	39	65	46	88	48	70	46	70	42	81	50	73	50	78	55	86	47	82	49	79	54	79	45	77	53	80	49
26....	55	45	49	41	66	47	54	44	58	40	78	55	55	48	79	54	78	51	67	47	82	52	67	49	80	56	71	47
27....	57	44	52	40	68	41	56	43	52	40	63	48	62	45	69	50	68	48	64	44	65	49	61	50	65	50	63	48
28....	65	32	62	31	72	36	66	33	62	34	63	42	64	42	67	40	68	40	65	42	62	42	60	45	64	45	64	44
29....	66	36	64	44	68	32	67	39	73	35	68	46	67	42	72	39	67	41	64	40	68	40	63	32	70	44	66	40
30....	80	44	78	53	90	50	83	47	76	38	67	53	72	53	67	50	85	46	78	57	76	44	59	50	65	50	58	52
31....	83	50	80	54	93	46	82	51	80	50	84	54	81	50	86	50	91	53	88	49	88	54	82	42	85	56	80	46
Mns..	72.5	48.5	72.0	50.9	80.0	50.4	73.9	50.1	75.6	47.8	76.8	56.0	74.1	52.8	77.8	54.3	79.2	54.1	76.2	52.5	77.8	56.2	73.6	51.1	75.3	56.9	74.5	53.1

Date.	Wisconsin.														Iowa.											
	Delavan.		Eau Claire.		La Crosse.		Madison.		Mauston.		Spooner.		Wausau		Algona		Cedar Rapids.§§		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	84	64	72	64	74	58	78	68	78	64	70	55	74	62	75	56	75	62	74	58	80	63	78	63	77	62	83	68
2....	82	55	77	54	78	52	74	57	75	52	77	56	73	51	82	48	81	56	79	50	81	59	83	55	78	57	80	61
3....	84	54	77	55	82	56	81	57	77	50	77	55	74	54	81	62	79	59	77	60	84	59	84	66	81	60	82	62
4....	88	64	82	61	86	63	84	62	83	62	78	59	80	59	87	58	89	60	86	60	88	67	91	63	87	67	87	69
5....	86	62	82	57	87	59	83	65	84	56	79	55	80	56	88	59	85	60	85	61	89	63	87	67	86	65	86	68
6....	91	60	79	60	82	63	89	66	80	60	75	56	77	58	89	65	87	65	86	65	89	67	90	64	88	64	89	68
7....	91	64	76	60	81	65	83	68	83	63	73	48	78	57	83	62	87	64	80	63	89	69	86	64	86	64	88	66
8....	90	64	80	56	83	59	82	62	78	60	79	54	80	58	87	59	86	64	83	60	85	65	88	63	83	64	86	67
9....	88	59	79	65	82	65	83	63	84	60	75	61	80	62	89	64	82	65	83	66	82	65	87	71	81	67	88	72
10....	92	62	78	59	74	61	87	61	75	60	65	53	76	58	84	66	96	65	85	64	94	68	102	71	90	64	99	71
11....	70	63	74	54	68	57	70	58	68	54	75	46	73	51	67	59	69	66	66	60	74	64	72	66	71	59	90	73
12....	75	59	76	53	73	58	74	58	75	56	79	53	76	56	81	51	86	61	81	59	86	62	93	66	78	59	92	68
13....	80	62	81	60	82	65	80	63	80	65	83	62	77	60	85	68	90	62	83	64	89	70	94	74	83	66	91	74
14....	90	65	83	66	83	68	86	66	78	62	82	65	79	59	92	76	94	70	88	70	90	70	97	71	89	66	90	70
15....	89	63	89	65	90	64	87	64	85	60	88	61	88	58	95	80	92	69	90	64	90	69	96	72	90	64	90	73
16....	90	66	85	69	84	69	87	69	85	70	80	53	85	64	92	77	98	69	87	70	93	69	102	74	91	68	95	73
17....	86	60	81	59	81	63	80	66	78	60	77	53	79	55	86	75	86	70	81	64	87	71	86	71	83	68	80	70
18....	80	56	76	54	77	57	74	62	74	60	73	45	74	52	84	73	82	65	79	60	83	66	86	67	78	62	85	67
19....	76	52	77	50	79	52	75	56	75	48	77	48	72	46	85	72	69	60	78	54	78	62	80	64	76	55	81	67
20....	80	49	82	52	82	54	78	57	80	52	86	56	74	50	88	72	83	57	82	54	81	59	87	60	79	58	83	60
21....	82	56	78	61	82	64	81	58	80	60	83	58	73	50	86	72	89	59	82	64	83	63	82	69	83	63	81	64
22....	72	60	71	53	65	51	68	55	78	56	65	46	74	52	73	51	71	60	67	51	74	57	74	59	69	56	78	63
23....	71	47	72	45	70	48	70	54	68	44	70	39	68	41	75	48	70	53	71	48	70	55	69	56	70	53	69	57
24....	73	59	74	52	74	50	74	56	70	45	70	48	70	46	78	56	75	55	75	55	73	54	76	54	73	55	73	54
25....	76	49	77	60	77	57	74	54	75	47	75	47	72	52	79	55	81	56	78	57	79	58	82	60	76	54	80	59
26....	81	57	81	53	82	58	77	60	80	55	77	54	79	51	85	52	84	57	82	57	81	64	85	57	80	64	81	62
27....	84	58	75	55	74	57	80	61	75	62	67	52	77	50	78	52	76	62	66	50	86	60	72	59	79	60	86	62
28....	74	55	66	44	66	47	66	55	65	45	65	42	76	46	68	41	70	53	66	45	72	54	70	50	67	54	74	57
29....	69	40	70	40	71	42	69	48	68	36	68	34	67	37	73	38	72	46	71	41	70	49	74	49	70	45	73	51
30....	69	44	65	52	64	52	67	49	70	44	58	51	64	49	74	52	72	46	68	52	73	51	78	52	69	50	77	50
31....	81	56	84	53	82	55	80	53	80	49	80	51	78	52	88	56	88	49	84	55	86	56	92	58	85	55	88	54
Mns..	81.4	57.5	77.4	56.2	77.9	57.7	78.1	59.5	76.9	55.4	75.0	52.1	75.7	53.3	82.5	60.7	82.1	60.2	78.8	58.1	82.5	62.2	84.6	63.1	79.9	60.3	84.0	64.5

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 5*—Continued.

Date	Missouri.		Indiana.		Illinois.															
	Hannibal.		Laporte.		Cairo.		Greenville.		La Salle.		Monmouth.		Mount Vernon.		Peoria.		Springfield.		Winnebago.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	84	68	.....	.....	83	67	85	69	82	65	83	70	88	69	83	64	84	68	84	63
2	83	60	.....	.....	83	68	85	66	80	61	84	57	86	65	82	59	82	65	83	65
3	83	67	.....	.....	85	66	86	65	85	59	86	55	85	64	85	58	87	62	89	56
4	87	66	.....	.....	88	69	85	66	87	68	89	64	87	65	87	65	87	66	90	55
5	88	62	.....	.....	83	69	87	66	89	64	92	64	85	66	90	63	85	66	90	63
6	90	68	.....	.....	84	70	89	68	92	64	91	65	87	68	90	66	91	66	91	68
7	91	66	.....	.....	86	71	88	66	88	66	89	65	89	65	88	66	88	65	91	63
8	89	70	.....	.....	98	71	90	69	85	69	90	63	95	65	87	64	88	69	90	65
9	95	71	.....	.....	93	71	94	69	86	64	87	64	93	71	90	62	91	68	88	60
10	98	72	.....	.....	95	77	92	68	90	66	95	66	95	70	93	66	92	68	93	65
11	96	77	.....	.....	95	74	94	73	73	64	90	67	98	71	81	68	92	73	82	60
12	94	73	.....	.....	90	76	95	74	84	64	88	64	96	72	87	67	88	70	81	57
13	91	72	.....	.....	82	71	89	70	88	71	92	65	84	72	91	69	89	70	83	65
14	88	72	.....	.....	82	72	82	72	89	69	92	67	89	71	89	67	85	70	92	65
15	94	71	.....	.....	84	72	91	70	89	68	94	66	90	70	91	66	91	71	91	63
16	97	65	.....	.....	91	72	95	65	94	67	94	63	95	61	95	63	94	65	93	64
17	88	68	.....	.....	91	75	94	72	84	70	82	66	98	70	80	63	88	74	85	65
18	90	64	.....	.....	90	72	90	66	81	62	88	62	92	67	85	60	86	68	80	60
19	82	68	.....	.....	77	68	82	62	77	56	82	60	82	61	79	62	81	64	79	57
20	84	63	.....	.....	85	68	85	61	79	55	86	53	88	63	82	52	82	60	83	53
21	77	65	.....	.....	87	62	85	60	83	59	85	56	89	56	87	59	85	59	85	56
22	82	68	.....	.....	81	68	82	66	77	62	82	57	86	61	81	61	78	66	75	56
23	68	57	.....	.....	88	70	76	61	70	55	76	57	91	66	72	54	69	56	71	48
24	71	55	.....	.....	81	65	66	58	68	58	76	52	75	64	69	54	68	55	73	52
25	79	54	.....	.....	73	64	74	58	75	53	82	52	71	60	78	51	76	55	79	51
26	80	59	.....	.....	75	64	76	58	80	56	84	57	74	57	81	54	77	57	83	63
27	83	65	.....	.....	84	70	85	65	86	62	90	65	85	60	88	59	84	63	86	58
28	75	59	.....	.....	76	69	77	62	73	55	75	55	76	62	76	55	77	58	75	56
29	74	52	.....	.....	74	60	74	51	70	49	76	44	75	53	73	47	73	51	70	43
30	76	53	.....	.....	76	57	78	51	74	47	81	45	80	51	79	51	74	49	71	46
31	89	49	.....	.....	81	61	83	56	84	54	90	47	86	53	86	47	83	53	84	52
Means	85.4	64.5	.....	.....	84.5	68.7	85.0	64.6	82.0	61.4	86.2	59.7	86.8	64.2	84.0	60.1	83.7	63.5	83.5	58.4

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 6, MISSOURI VALLEY.

MONTROSE W. HAYES, District Editor.

GENERAL SUMMARY.

The greater part of August was moderately cool and wet in most of the district. There were two hot periods, but they were of short duration, and there were some localities in which there was insufficient moisture, but as a rule there was very general relief from the hot, dry weather that prevailed in the lower two-thirds of the drainage area during May, June, and July. Pasturage and late crops were improved, and the ground was put in good condition for fall plowing. Local storms occurred in Montana, South Dakota, and Nebraska, and the accompanying wind and hail were destructive to crops and buildings. Floods in the Republican and Solomon Rivers in Kansas damaged crops and washed out some railroad beds. Light frost formed in localities in western Iowa and northern Nebraska on the 28th and was injurious to some late vegetables. On the latter days of the month killing frosts occurred locally in Montana, North Dakota, and northern and western South Dakota. They were considerably earlier than usual, but apparently caused minor damage only.

TEMPERATURE.

There were two periods of hot weather culminating on the 10th and 15th, and in one or both of these periods all States in the district except North Dakota had temperatures of 100° or higher. The highest was 109° on the 10th in Nebraska, Kansas, and Missouri. During the first six or seven days there was a slight deficiency in the temperature, and after the 19th or 20th there was a marked deficiency. The thermometer readings from the 25th to the end of the month were unusually low for the season, and temperatures below the freezing point occurred in parts of all the States of the district except Kansas, Missouri, and Iowa. The lowest was 16° at Bowen, Mont., on the 25th.

PRECIPITATION.

In the mountains from the Yellowstone National Park southward into Colorado, in extreme western Kansas, western Iowa, and northwestern Missouri the precipitation was deficient. The region of greatest deficiency was in an area extending for a distance of about 50 miles on either side of the Missouri-Iowa line to the west of the Grand River. The greatest excess was in north-central Kansas, Nebraska, and southern South Dakota and was caused, not by any general rain, but by heavy local showers that occurred on varying dates during the first week of the month. In eastern Kansas, southeastern Nebraska, Iowa, and Missouri the wettest periods were from the 1st to the 7th and from the 18th to the 22d. During the remainder of the month there were frequent showers, but they were very local in character and were generally light. In the other parts of the district precipitation was fairly well distributed through the first 25 days of the month, but was heaviest before the 10th. The greatest monthly total was 12.04 inches at Mount Vernon, Mo., and the greatest amount in 24 consecutive hours was 7.55 inches at Alma, Nebr., on the 2d. Traces of snow fell in Montana, Wyoming, Colorado, and South Dakota.

RIVERS.

The Missouri River was abnormally low, but its stages were by no means unprecedented. Lower stages prevailed in August of 1897, 1900, 1901, and 1910, while the stages of August, 1874, were very little higher than those that prevailed during the month just passed. At Hermann, Mo., 103 miles from the mouth of the Missouri River, there was very little fluctuation. The highest water was 8.5 feet on the 1st and the lowest was 6 feet on the 27th. The small streams as a rule had nearer a normal flow than in July. Heavy rains over the watersheds of the Republican and Solomon Rivers in Kansas caused rises in those streams to points above the flood stage. No other floods occurred.

A PHENOMENON OF LIGHTNING DISCHARGE.

By Prof. FRANCIS E. NIPHER.

Everyone has probably noticed the brief dash of large raindrops which sometimes occurs immediately after an overhead peal of thunder. I have never seen a satisfactory explanation of the cause for this phenomenon. I offer one which has been suggested from results of about five years of work on electric discharge.[1] I have published reproductions of discharge effects over photographic films which seem to fully justify the following conclusions.

Every disruptive lightning discharge which has its terminals in air terminates as sheet lightning at one end and forked lightning at the other end.

The region of sheet lightning is one in which the air molecules have less than their normal charge of negative corpuscles. It is a region in which the air is in a condition of conduction. The disruptive channel ends in a diffused discharge. Such effects are easily produced on photographic plates.

The region of forked lightning at the other end of the discharge channel is one in which the air is overcharged with negative corpuscles. This region is not a region of conduction. The channel of discharge, along which the negative corpuscles are passing to the sheet-lightning end of the discharge, here develops tributary discharge channels which penetrate to various parts of this overcharged region. They are somewhat like tributaries to a river. They have that appearance on the photographic plate when the discharge is through the air in close contact with the film. These tributaries are the so-called "forks."

Before the lightning stroke the falling negatively overloaded drops repel each other. They will not coalesce. After the discharge a large number of drops have lost their negative overcharge. But these branching discharge channels have not reached all of the drops. Some are still highly charged. These two groups of drops attract each other. They are already falling, and they coalesce as they continue their path to earth.

The forked end of the discharge is usually hidden in the rain cloud. The sheet-lightning end of it is probably above the clouds in most cases.

[1] Instructive articles containing results of this work are to be seen in Transactions of the Academy of Science of St. Louis, Vol. XIX, Nos. 1 and 4, and Vol. XX, No. 1; Proceedings of American Philosophical Society, Vol. 1, 1911; and Science of Sept. 1, 1911.—*Dist. Ed.*

TABLE 1.—*Climatological data for August, 1911. District No. 6, Missouri Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Wyoming.																				
Arapahoe	Fremont		2								0.22		0.16	0	2	16	15	0	sw.	A. E. Dietz.
Barnum [1]	Johnson	5,500	6								0.85		0.85	0	2	18	3	1	w.	Thos. Freeguard.
Basin	Bighorn	3,862	12	66.2	− 5.9	96	19	38	25†	45	0.28	+ 0.06	0.23	0	2	27	3	1	nw.	O. J. Robertson.
Bennett	Carbon		2								1.03		0.54	0	4	23	8	0	w.	Chas. C. Young.
Big Creek Station *	....do	7,500		57.2		85	19	27	23	50	1.61		0.67	0	8	6	18	4	sw.	U. S. Forest Service.
Burns	Laramie	5,400	2	71.1		96	20	53	4	32	0.58		0.33	0	2				nw.	Alex. Hastie.
Casper	Natrona	5,101	2																	M. C. Cook.
Centenial	Albany	8,074	8	58.4		84	18	34	3†	40	0.97		0.27	0	10	10	8	13	w.	Louis A. Gregory.
Cheyenne	Laramie	6,088	40	65.0	− 0.8	90	8†	41	28	38	1.35	− 0.12	0.80	0	7	6	19	6	s.	U. S. Weather Bureau.
Chugwater *	....do	5,282	10	64.8	− 1.0	95	31	31	25	53	0.58	− 0.42	0.20	0	4	13	13	2	se.	A. H. Woolever.
Clark	Park	4,320	5	64.2		92	13	41	28	36	1.17		0.45	0	7	13	9	9	n.	Chas. A. C. Snow.
Cody	....do	5,000	4	62.9		95	19	32	28	50	0.85		0.21	0	8	15	9	7	w.	C. W. Dibble.
Crazy Creek	....do	6,828		51.0		83	19	20	25	57	0.57		0.23	0	8	21	7	3	e.	Jas. Smith.
Dome Lake	Sheridan	8,821	3	47.8		70	20	23	27†	33	0.70		0.45	T.	5	19	7	5	w.	Abe Mills.
Douglas	Converse	4,793	2	66.2		96	20	32	24	43	0.85		0.38	0	5					Henry C. Miller.
Dubois	Fremont	6,909	4	57.0		86	18	28	26	50	T.		T.	0	0	17	14	0	w.	Dr. F. H. Welty.
Eatons Ranch	Sheridan	4,600	6	68.0		93	31	33	28	47	0.90		0.37	0	4	15	11	2	n.	F. A. Eaton.
Echeta	Crook	4,200	2																	M. R. Hunter.
Elk Mountain	Carbon		6								0.94	− 0.42	0.50	0	4					Wm. Richardson.
Encampment *	....do	7,322	2	63.0		87	19	37	3†	41	0.74		0.30	0	6	10	15	1	sw.	U. S. Forest Service.
Ervay	Natrona	6,400	2																	Frank Jameson.
Fort Laramie	Laramie	4,270	33	69.2	+ 2.2	103	15	34	25	50	0.37	− 0.56	0.21	0	3	20	11	0	nw.	John Hunton.
Fox Park	Albany	9,015	1	50.0		77	19†	19	25	49	1.28		0.40	0	7	12	18	1		U. S. Forest Service.
Germania	Bighorn	4,312		64.0		92	20	36	25†	44	0.13		0.05	0	3	23	6	2	nw.	L. E. Watson.
Gillette	Crook	4,546	5	64.2		93	8	36	28	40	0.64		0.25	0	7	13	15	3		S. D. Perry.
Horse Creek	Fremont																			U. S. Forest Service.
Hunters Station	Johnson	8,000	5	52.7		83	19	28	28	41	0.63		0.21	0	5	21	3	7	w.	Do.
Hyattville	Bighorn	4,632	12	67.0	− 1.2	99	20	38	22†	43						16	8	7		Wm. Booth.
Jireh	Converse	5,050	1								1.13		0.32	0	7	18	11	2	nw.	P. L. Ford.
Kirtley	....do		7	64.8		95	20	35	28	42	0.85	− 0.74	0.35	0	5	21	3	7	se.	D. M. Zum Brunnen.
Kirwin	Park	9,187	3	48.8		73	31	26	24†	35	0.80		0.20	0	5	17	14	0	w.	C. L. Tewksbury.
Knowles	Crook	4,500	2								1.79		0.54	0	8					Geo. A. Knowles.
Lagrange	Laramie	4,510	1								1.08		0.48	0	7	23	5	3	w.	Owen Shupp.
Lander	Fremont	5,372	19	63.8	− 1.9	93	18	35	25	45	0.22	− 0.32	0.15	0	4	21	9	1	w.	U. S. Weather Bureau.
Laramie	Albany	7,188	20	61.1	− 0.8	86	31	33	3†	43	0.83	− 0.24	0.30	0	12	21	9	1	se.	University of Wyoming.
Leo	....do	6,878	10																	C. A. Cowdin.
Lolabama Ranch	Park	7,052	7																	Mary E. Painter.
Lovell	Bighorn	3,825	7	64.2		95	19	34	28	49	0.41		0.15	0	5	14	11	6	n.	R. Fred Harrison.
Lusk	Converse	5,007	21	64.2	− 2.4	94	20	35	24†	43	1.02	− 0.08	0.41	0	3					D. E. Goddard.
Manville	....do	5,050	1								1.15		0.45	0	8	21	8	2	ne.	C. A. Sherman.
Moorcroft	Crook	4,111	8	67.2		108	14	38	22†	60	1.75		0.40	0	11	11	6	14		C. T. McCampbell.
Moore	Albany	6,000	10	63.8	− 0.9	92	8†	29	25	55	0.75	− 0.57	0.25	0	6	9	15	7	w.	Edwin Moore.
New Castle	Weston	4,319	4	65.4		99	15	36	28	42	3.69		1.10	0	9	16	11	4	n.	Dr. S. W. Johnson.
Pathfinder	Natrona	5,735	5			94	19				0.11		0.06	0	2	16	12	3	ne.	U. S. Reclamation Service.
Phillips	Laramie	4,900	8																	Mrs. Arthur Rugg.
Pine Bluff	....do	5,038	9								0.65		0.30	0	6					C. L. Beatty.
Powell	Park	4,376	4	64.4		93	18	36	28	46	0.51		0.23	0	5	6	25	0	nw.	U. S. Reclamation Service.
Rawlins	Carbon	6,748	9	64.6		90	19	34	25	43	0.08	− 0.39	0.05	0	2	21	7	3	nw.	E. J. Ehrenfeld.
Riverton	Fremont	4,960	2	65.2		94	18	35	25	47	1.00		0.40	0	4	13	17	1	e.	F. H. Allyn.
Rocky Point	Crook										3.19	..?..	1.34	0	11	17	7	7	n.	P. Woxen.
Saratoga	Carbon	6,785	13	62.2	− 1.1	89	19	33	3	46	1.12	+ 0.13	0.47	0	8	15	15	1	sw.	Frederick Clark.
Seven Mile Creek *	....do			57.3		81	19	32	27	37	1.40		0.40	0	9	7	19	0	w.	U. S. Forest Service.
Sheridan	Sheridan	3,790	16	63.0	− 1.6	94	31	31	28	48	1.24	+ 0.66	0.52	0	8	10	9	12	nw.	U. S. Weather Bureau.
Shoshone Dam *	Park	5,385	5	64.4		95	19	42	23	38	0.53		0.40	0	3	19	11	0	w.	U. S. Reclamation Service.
Soldiers Home	Johnson	4,635	19			96	19	21	28		0.60	− 0.26	0.13	0	8	12	2	17	n.	Geo. L. Courtney.
South Pass City	Fremont	7,873	9	54.1		82	19	21	25	47	0.37		0.35	0	2	20	11	0	sw.	John Sherlock.
Sundance	Crook			63.8		93	15	30	28	42						14	12	5	e.	Geo. W. Ashdown.
Thermopolis	Fremont	4,350	7	68.6		99	20	39	25	52	0.36		0.10	0	5	20	11	0	sw.	A. L. Duhig.
Verona	Sheridan	4,360	2								1.24		0.53	0	4	3	28	0	se.	O. A. Roade.
Wheatland	Laramie			68.2		97	15	40	25	48	0.43		0.12	0	5	15	12	4	n.	A. De F. Snively.
Wiants Ranch	Carbon	7,400	1								0.59		0.27	0	4	15	14	2	sw.	Ira G. Wiant.
Wiley	Park	5,375	2	67.8		90	4†	39	27	40	0.62		0.27	0	5	21	7	3	w.	Thos. S. Harrison.
Woodrock	Sheridan										1.72		0.41	0	10	18	11	3	sw.	U. S. Forest Service.
Worland	Bighorn			66.8		100	12†	35	25	49	0.20		0.11	0	6	16	14	1	nw.	Harry S. Smith.
Wyncote	Laramie	4,207	4	66.8		95	14	36	25	47	0.80		0.64	0	2	19	9	3	e.	U. S. Reclamation Service.
Yellowstone Park	Yellowstone National Park.	6,200	23	56.4	− 4.5	84	18	33	24	42	0.66	− 0.36	0.51	0	6	15	15	1	sw.	U. S. Weather Bureau.
(1) Fountain	....do	7,220	5	51.8		81	17†	23	25	52	0.15		0.15	0	1	26	0	5	n.	U. S. Army.
(2) Gallatin	....do										0.80		0.55	0	5	26	4	1	n.	Do.
(3) Grand Canyon	....do	7,900	4	51.1		82	19	23	25	51	0.40		0.15	0	6	18	13	0	sw.	Do.
(4) Lake Yellowstone	....do	7,733	7	51.0		79	19	25	25	45	0.21		0.10	0	4	13	0	18	s.	Do.
(5) Norris	....do	7,525	7	49.5		79	17†	20	25	52	0.58		0.41	0	4	23	1	7	sw.	Do.
(6) Riverside	....do	6,500	5	52.0		83	19	28	7	51	1.15		0.40	0	6	26	0	5	w.	Do.
(7) Soda Butte	....do	7,000	6	52.2		86	18†	20	27	55	0.71		0.43	0	8	24	5	2	sw.	Do.
(8) Sylvan Pass	....do	7,000	4	50.0		84	18†	19	23	56	0.94		0.44	0	6	25	0	6	w.	Do.
(9) Thumb	....do	7,772	5	53.2		82	12	25	25	52	0.18		0.10	0	4	25	5	1	sw.	Do.
(10) Tower Falls	....do	6,250	2	54.7		86	31	24	25	53	0.22		0.07	0	4	17	5	9	w.	Do.
(11) Upper Gey. Basin	....do	7,395	7	50.9		76	18†	29	11†	44	T.		T.	0	0	29	0	2	n.	Do.
Montana.																				
Adel	Cascade	5,200	13	57.0	− 2.0	85	14†	32	24†	44	3.66	+ 2.17	0.80	0	15	13	6	12	w.	Mrs. B. F. Burch.
Agricultural College	Gallatin	4,700	14																	Prof. E. Burke.
Augusta	Lewis and Clark	4,071	13	57.2	− 3.1	90	19	28	24	52	1.70	+ 0.50	0.32	0	10	14	9	8	w.	C. C. Covington.
Babb	Teton	4,461	5	51.9		75	31	30	22	40	2.83		0.45	0	15	16	5	10	sw.	U. S. Reclamation Service.
Badger Creek	....do																			Do.
Bald Butte	Lewis and Clark	6,500	2								2.47		0.47	0	10	14	5	12		M. W. Alderson.
Bigtimber	Sweet Grass	4,072	5	60.7		89	31	34	28	48	1.58		0.44	0	6	13	6	12	e.	F. A. Severance.
Bigtimber Creek	....do		2								2.95		0.63	0	14	8	12	11	w.	J. T. Mjolsness.
Billings	Yellowstone	3,115	16	63.4	− 6.1	95	13	33	28	49	0.89		0.21	0	7				w.	U. S. Weather Bureau.
Blackleaf	Teton	4,260	4																	Adolph Aman.
Bloomfield	Dawson		3																	E. B. Chaney.
Boulder Nursery	Jefferson	4,920	17	58.0	− 4.2	87	19	27	24†	55	1.09	+ 0.34	0.26	0	12	5	23	3		U. S. Forest Service.
Bowen	Beaverhead	6,060	5	50.6		85	17	16	25	59	0.98		0.20	0	8	21	4	6		B. B. Lawrence.
Bridger	Carbon	3,664	3	63.0		100	19	33	28	51	0.67		0.26	0	7	9	12	10	n.	L. E. Gard.
Broadview	Yellowstone		5	62.1		95	19	30	27	51	1.77		0.60	0	5	14	17	0	e.	Mabel Sudduth.

TABLE 1.—*Climatological data for August, 1911. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Montana—Continued.																				
Busby	Rosebud		8	64.4	.....	97	13	32	22	49	1.46	.....	0.47	0	11	14	12	5	ne.	Rev. G. A. Linscheid.
Busteed	Sweet Grass		4	60.5	.....	89	13	31	28	42	2.69	.....	1.15	0	8	11	15	5	ne.	T. H. Busteed.
Cabin Creek	Beaverhead		2								0.56	.....	0.47	0	3	24	7	0	nw.	W. J. Crowell.
Canyon Ferry	Lewis and Clark	3,644	13	63.4	− 2.3	92	19	36	24	41	0.89	− 0.12	0.55	0	7	18	6	7	ne.	A. C. Pratt.
Cascade	Cascade	3,361	7	60.8	.....	93	19	34	24	49	2.77	.....	0.74	0	13	15	11	5	sw.	Dr. E. E. James.
Chessman Reservoir	Lewis and Clark	5,275	3	52.9	.....	80	19	29	27	38	1.55	.....	0.40	0	8	18	2	11	sw.	C. D. Schmidt.
Chester	Chouteau	3,140	7	60.2	.....	91	19	31	10†	50	1.34	.....	0.62	0	8	16	7	8	nw.	E. D. Keith.
Chinook	....do	2,502	13	63.0[e]	− 3.7	90[e]	19†	30[e]	28	48[e]	0.99	− 0.14	0.30	0	8	18[e]	4[e]	4[e]	w.	T. O'Hanlon Co.
Chouteau	Teton	3,810	7																	T. J. Moore.
Clearcreek	Chouteau		6	59.8[e]	.....	87[e]	29†	30[b]	27	38[e]	2.89	.....	0.98	0	9	13[b]	10[b]	6[b]	w.	Cortez Sedgewick.
Clemons	Lewis and Clark	4,672	2								2.33	.....	0.60	0	13	10	9	12	w.	Frank Eberl.
Clydepark	Park		1								1.47	.....	0.43	0	8	13	9	9	.....	Dr. T. B. Marquis.
Conrad	Teton			58.6	.....	91[a]	18	32	27	46[a]	2.45	.....	0.79	0	12	18	5	8	w.	I. S. Martine.
Copper	Meagher		6								1.84	.....	1.16	0	7	13	10	8	w.	Orville Harris.
Crow Agency	Rosebud	3,041	30	65.4	− 3.9	98[b]	18	32[b]	22†	56[b]	0.87	− 0.10	0.35	0	10	6[b]	3[b]	20[b]	ne.	Ira R. Bamber.
Culbertson	Valley	1,927	8	67.7	.....	100	12†	32	22†	53	0.99	.....	0.42	0	4	7	16	8	nw.	G. H. Coulter.
Cummings	Carbon		1	56.6[e]	.....	86[e]	22	28[e]	24	57[e]	1.48	.....	0.52	0	5	17[e]	11[e]	0[e]	.....	John W. Brimmer.
Cut Bank	Teton	3,700	12	59.2	− 0.7	89	19	29	27	46	0.60	− 0.53	0.16	0	5	22	5	4	w.	Chas. N. Thomas.
Denton	Fergus	3,500	3																	P. J. Greisenauer.
Dillon	Beaverhead	5,147	14	60.0	− 2.1	90	18	32	3†	53	1.44	+ 0.10	0.47	0	10	11	14	6	sw.	Prof. J. E. Monroe.
Dirty Creek	Meagher	6,000	2								2.66	.....	0.75	0	10	11	12	8	w.	Lewis Cameron.
Dry Creek	Broadwater	5,500	2								0.67	.....	0.17	0	8	11	18	2	w.	J. C. Stuart.
Dry Wolf Camp	Cascade	6,000	2								3.54	.....	1.13	0	11	10[a]	9[a]	11[a]	sw.	Mrs. R. J. Eveleth.
East Gallatin River	Gallatin	6,000	3								1.74	.....	0.75	0	8	16	10	5	w.	John Eberhart.
Ekalaka	Custer		11	64.2	.....	95	13†	32	28	45	2.77	.....	1.42	0	13	15	10	6	n.	Wm. Freese.
Elkhorn	Jefferson	6,576	3								1.25	.....	0.44	0	8	7	16	8	w.	James Heagan.
Evans	Cascade	4,900	4																	H. Thrasher.
Fallon	Custer	2,208	7	65.0	.....	100	13	32	28	47	2.04	.....	0.60	0	7	13	8	10	w.	Mrs. A. C. Gifford.
Fish Creek	Silver Bow	8,500	2	51.2	.....	74	18	28	24	34	2.31	.....	0.99	0	8	17	8	6	w.	O. B. Tilton.
Flathead Creek	Gallatin	6,000	2	55.4[e]	.....	84[e]	19	30[e]	6†	42	1.91	.....	.....	0	.....	10[e]	8[e]	8[e]	nw.	Alta Williams.
Forsyth	Rosebud	2,514	6																	Wayne Wakefield.
Fort Benton	Chouteau	2,630	32	62.5	− 5.0	91	31	39	28	42	3.30	+ 2.37	0.60	0	9	16	8	7	sw.	Jere Sullivan.
Fort Shaw	Cascade	3,500	23	62.8	− 1.7	93	19	33	24	49	1.60	+ 0.70	0.57	0	7	16	6	9	sw.	U. S. Reclamation Service.
Fort W. H. Harrison	Lewis and Clark	4,004	8																	Post Hospital.
Foster	Yellowstone		2	65.0	.....	99	13	33	28	51	0.90	.....	0.30	0	8	16	8	7	n.	E. K. Bowman.
Garneil	Fergus	5,500	3	55.4	.....	85	18	27	27	44	3.91	.....	0.75	T.	12	9	8	14	w.	Thos. E. Scally.
Glasgow	Valley	2,092	15	63.8	− 3.7	96	13	32	28	44	1.83	+ 1.16	.....	0	.....	16	7	8	n.	W. M. Leonard.
Glendive	Dawson	2,069	21	65.0	− 5.7	96[a]	12	32	27	43[a]	1.83	+ 0.69	0.80	0	7	14	10	7	ne.	E. C. Leonard.
Goldbutte	Chouteau		4	59.4	.....	87	19†	27	27	44	1.93	.....	0.47	0	14	8	19	4	n.	Joseph Berthelote.
Graham	Custer		6	65.4[g]	.....	97[g]	31	32[g]	28	49[g]	3.02	.....	0.76	0	12	17[b]	4[b]	2[b]	nw.	J. S. Rue.
Grayling	Gallatin	6,700	6	51.2[d]	.....	83[d]	18	19[d]	27	58[d]	0.56	.....	0.30	0	4	12[d]	10[d]	5[d]	sw.	P. Kerzenmacher.
Great Falls	Cascade	3,350	20	62.2	− 4.2	90	19	39	27	36	2.67	+ 1.66	0.73	0	11	13	11	7	n.	S. H. Bauman.
Half Moon Pass	Fergus	6,500	2																	Thos. Stigen.
Half Way House	Broadwater	6,000	2								1.89	.....	0.76	0	10	14	10	7	ne.	Gordon Deans.
Harlowton	Meagher	4,165	4	60.2	.....	85[b]	14†	29[b]	28	51[b]	1.77	.....	.....	0	.....	8[b]	8[b]	13[b]	w.	Joseph Muir.
Havre	Chouteau	2,505	32	62.7	− 4.2	90	31	31	27	40	2.24	+ 0.98	0.74	0	12	19	7	5	e.	U. S. Weather Bureau.
Helena	Lewis and Clark	4,110	32	61.8	− 4.3	90	19	38	24	41	0.87	+ 0.18	0.38	0	9	12	11	8	sw.	Do.
Highwood	Chouteau		5																	W. S. McCord.
Huntley	Yellowstone	3,014	5	65.0	.....	97	13	34	28	47	0.90	.....	0.29	0	4	9	21	1	ne.	U. S. Reclamation Service.
Jones Canyon	Gallatin	6,800	2								1.63	.....	0.49	0	6	.....	.....	.....	w.	James McCune.
Jordan	Dawson		6																	W. C. Henderson.
Knobles Ranch	Chouteau										2.04	.....	0.74	0	12	18	4	9	s.	F. H. Knoble.
Lewistown	Fergus	4,010	15	58.2	− 4.1	87	17†	32	24†	42	4.15	+ 2.61	1.74	0	15	8	16	7	e.	W. W. Watson.
Livingston	Park	4,488	15																	W. A. Jennings.
Lonetree	Chouteau	3,280	6	63.2	.....	91	19	35	27	41	2.98	.....	1.10	0	9	19	6	6	w.	E. Wilson.
Malta	Valley	2,240	5	62.9	.....	92	13†	33	23†	45	1.44	.....	0.53	0	7	12	16	3	nw.	U. S. Reclamation Srevice.
Medicine Lake	....do		1	61.8	.....	92[a]	13	30[a]	22	43[a]	2.11	.....	0.56	0	12	14[a]	11[a]	5[a]	se.	J. S. Collier.
Melstone	Fergus	2,903	2								1.90	.....	0.70	0	6	.....	.....	.....	.....	E. J. Parkinson.
Mildred	Custer		2								1.67	.....	0.61	0	8	4	23	4	ne.	Leon B. Clark.
Miles City	....do	2,371	20	67.2	− 4.3	98	13	38	28	42	1.59	+ 0.56	0.94	0	10	12	10	9	ne.	U. S. Weather Bureau.
Norris	Madison	4,845	5	62.4	.....	91	18†	33	11	49	0.90	.....	0.40	0	5	17	9	5	s.	Madison River Power Co.
Nye	Sweet Grass		3	54.0	.....	87	30	26	28	52	1.52	.....	0.33	0	14	13	7	11	e.	F. L. Bryant.
Olsen Creek	Jefferson	6,345	3								1.71	.....	0.52	0	6	23	5	3	w.	Robert Olsen.
Pipestone Pass	....do	7,000	3								1.35	.....	0.58	0	10	15	12	4	w.	Mrs. T. Kiermeyer.
Poplar	Valley	2,020	26	65.2	− 1.9	96	13	31	28	44	1.74	+ 0.71	0.59	0	5	21	6	4	n.	H. M. Cosier.
Red Lodge	Carbon	5,548	12	56.8	− 3.6	84	13†	32	24	40	1.54	+ 0.55	0.25	0	11	8	9	14	n.	I. A. Draper.
Renova	Jefferson	4,383	13	60.0	− 3.7	91	19	30	28	52	0.50	− 0.19	0.16	0	6	19	8	4	ne.	F. B. Elmer.
Ryegate	Yellowstone	3,640	2	62.8[e]	.....	95[e]	16†	30[a]	27	52[f]	1.83	.....	0.78	0	7	15[a]	2[a]	13[a]	e.	H. Scherfenberg.
Seville	Teton	3,980	3	58.4	.....	90	11	31	27	48	1.29	.....	0.58	0	8	5	11	15	w.	U. S. Reclamation Service.
Shelby	....do	3,276									1.53	.....	1.09	0	11	14	6	11	nw.	C. D. Kicher.
Sidney	Dawson		1	63.7	.....	92	13	31	22	37	2.10	.....	1.01	0	11	13	7	11	e.	Fred W. Arndt.
Spokane Ranch	Lewis and Clark		1								0.93	.....	0.46	0	7	16	13	2	.....	O. E. Penwell.
Springbrook	Dawson		10	63.0	− 3.7	95	13	28	22	44	1.75	− 0.77	0.88	0	6	17	8	6	se.	Mrs. H. L. Miller.
Stearns	Lewis and Clark	4,500	2								2.78	.....	0.86	0	5	11	0	20	.....	J. W. Hardgrove.
Sunlit Farm	Chouteau			59.2	.....	88	13†	25	27	43	0.98	.....	0.25	0	10	13	5	13	nw.	C. R. Noyes.
Three Forks	Gallatin	4,066	1																	M. S. Carpenter.
Tokna	Dawson	2,050	6	63.7	.....	96	93	32	22	43	2.63	.....	0.60	0	6	20	2	9	w.	U. S. Reclamation Service.
Trail Creek	Park	6,000	3								1.79	.....	0.55	0	9	19	9	3	w.	A. Weidenbauer.
Twin Bridges	Madison	4,650																		D. Bushnell.
Utica	Fergus	5,000	17	58.0	− 6.8	85	19†	33	27	34	5.37	+ 4.13	1.36	0	13	12	12	7	w.	P. W. Korell.
Valentine	....do		15	62.0	.....	93	31	33	24†	48	2.15	.....	0.60	0	9	19	3	9	w.	B. M. Bean.
Valier	Teton										3.43	.....	1.03	0	14	19	2	10	.....	H. J. Saunders.
Virginia City	Madison	5,880	23	59.2	− 4.5	87	19	35	24	34	1.21	+ 0.03	0.60	0	8	17	8	6	e.	M. Mailand.
Wall Rock Mountain	Broadwater	5,600	2								1.40	.....	0.57	0	7	17	13	1	.....	D. L. Doig.
Warm Springs Creek	Madison	7,500	2								1.25	.....	0.39	0	8	6	13	12	sw.	M. D. Lytle.
Wheaton	Musselshell																			Irvin Story.
Wilder	Fergus			64.1	.....	94	13	34	22†	47	1.38	.....	0.43	0	8	16	6	9	e.	J. Rogers.
Wolf Creek	Lewis and Clark	4,000	8	63.9	.....	95	19†	40	24†	47	2.37	.....	0.55	0	13	12	16	3	w.	A. J. Reed.
Woodville	Jefferson	6,376	2								2.00	.....	0.53	0	8	10	17	4	sw.	Anna Kinman.
North Dakota.																				
Aplin	Oliver		5	61.2	.....	91	20	29	28	38	3.21	.....	1.72	0	10	11	13	7	s.	J. B. Hagelbarger.
Beach	Billings	2,759	5	62.2	.....	93	12†	29	28	43	2.29	.....	0.91	0	9	18	11	2	ne.	D. J. Steiner.
Belfield	Stark	2,583									1.46	.....	0.60	0	5	4	16	11	se.	W. F. Goblus.
Berthold Agency	McLean	2,082	15	62.3	− 6.7	93	13	29	23	46	3.06	+ 1.93	1.63	0	5	11	9	7	n.	C. L. Hall.
Bismarck	Burleigh	1,674	37	63.6	− 4.5	91	14	32	28	37	2.72	+ 0.74	0.81	0	10	9	14	7	nw.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for August, 1911. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
North Dakota—Contd.																				
Broncho	Mercer		4	61.3	.....	87a	17	34a	29	48a	4.77	.....	1.71	0	8	...	...	...	nw.	E. M. Walker.
Buford	Williams	1,944	6	63.2	.....	97	13	33	22	40	1.89	.....	0.95	0	12	8	2	21	ne.	J. A. Beisel.
Dickinson	Stark	2,453	19	62.0	− 5.5	95	20	26	28	43	2.18	+ 0.33	0.55	0	8	6	17	8	ne.	L. R. Waldron.
Edgeley	Lamoure	1,468	10	64.2	− 2.7	90	14	36	23	42	4.10	+ 1.80	0.85	0	12	3	20	8	se.	O. A. Thompson.
Epping	Williams		4								2.90	.....	1.00	0	7	17	8	6	e.	M. E. Uggen.
Fullerton	Dickey	1,439	13	63.2	− 3.4	91	31	37	23†	40	3.07	+ 0.07	0.96	0	11	16	9	6	nw.	F. O. Alin.
Garrison	McLean		2	61.4	.....	89	13	30	28	36	5.68	.....	2.18	0	9	6	16	9	se.	G. L. Robinson.
Haley	Bowman		4	63.2	.....	94	12†	23	28	48	1.85	.....	0.55	0	9	18	6	7	se.	A. M. Oberchain Lawrence.
Hettinger	Adams	2,253	5	63.0	.....	98	20	23	28	46	2.07	.....	1.10	0	11	11	9	11	.....	W. R. Lanxon.
Howard	Divide	2,275	5	61.2	.....	97	13	28	22	45	2.12	.....	0.67	0	11	6	11	14	nw.	C. P. Amsbaugh.
Jamestown	Stutsman	1,390	24	60.7	− 6.1	86	13	37	28	32	6.72	+ 4.38	2.25	0	12	15	0	16	nw.	Thos. Pettigrew.
Lamoine	Kidder		4	62.0	.....	93a	14	28a	28	41a	3.82	.....	1.99	0	7	17	8	6	nw.	E. V. Virgin.
McHenry	Foster	1,509	2	60.2	.....	85	13	34	28	31	3.94	.....	2.06	0	7	11	14	6	nw.	John Knox.
Manfred	Wells	1,605	10	61.8	.....	90	13	33	28	38	3.33	.....	1.35	0	9	8	17	6	nw.	P. B. Anderson.
Marmarth	Bowman		4								1.62	.....	0.62	0	10	14	7	10	e.	S. P. Grane.
Marstonmoor	Stutsman		4	56.6d	.....	82b	13†	23f	27	35e	3.72	.....	1.02	0	8	7	5	19	nw.	H. H. McCumber.
Medora	Billings	2,225	15	62.1	− 6.2	98	13	28	28	50	1.28	− 0.30	0.52	0	5	15	8	8	e.	J. W. Hesser.
Melville	Foster	1,509	14	64.2	− 2.6	95	19	33	28	43	4.76	+ 2.88	1.50	0	12	14	7	10	nw.	J. P. Kidder.
Mott	Hettinger		5	62.6	.....	98	20	25	28	52	1.94	.....	0.63	0	9	12	7	12	se.	O. H. Opland.
Napoleon	Logan	1,955	20	63.0	− 1.6	95	14	29	27†	42	2.19	− 0.26	1.07	0	10	11	6	14	s.	C. J. Hoof.
New England	Hettinger	2,400	16																	J. L. McGovern.
New Rockford	Eddy	1,531	2								5.67	.....	1.98	0	9					J. V. M. Sundberg.
New Salem	Morton	2,163	5	62.0	.....	93	14	31	28	41	3.32	.....	1.28	0	11	11	12	8	nw.	J. Christiansen.
Orange	Adams		5																	J. E. Goforth.
Schafer	McKenzie		3																	V. G. Morris.
Steele	Kidder	1,857	16																	B. C. Smith.
Washburn	McLean	1,731	8	63.5	.....	89	13†	35	22	34	2.53	.....	1.35	0	6	6	19	6	s.	W. R. Peterson.
Williston	Williams	1,875	32	62.6	− 5.3	96	13	32	22	40	2.27	+ 0.96	1.22	0	11	11	9	11	se.	U. S. Weather Bureau.
South Dakota.-																				
Aberdeen	Brown	1,300	21	65.0	− 4.0	99	15	35	28	35	5.32	+ 2.24	1.80	0	13	17	3	11	s.	D. G. Gallett.
Academy	Charles Mix		12	69.6	− 3.1	102	15	39	28	39	2.67	− 0.41	1.70	0	8	14	9	8	se.	I. T. Lothrop.
Alexandria	Hanson	1,352	22								2.50	− 0.20	0.74	0	5	16	10	5	se.	Albert Hill.
Ardmore	Fall River	3,557	2								3.32	.....	1.00	0	5	9	13	9	.....	C., B. & Q. R. R.
Armour	Douglas	1,521	15	70.6	− 1.5	103	15†	37	28	46	2.43	− 0.27	1.23	0	6	12	12	7	.....	T. J. Markey.
Bellefourche	Butte	3,000	3	64.8	.....	98	15	31	28	43	1.99	.....	0.75	0	6	7	15	9	se.	U. S. Reclamation Service.
Brookings	Brookings	1,636	22	66.3	− 1.6	91	14†	34	28	42	3.81	+ 1.06	1.22	0	10	6	16	9	se.	Experiment station.
Camp Crook	Harding	3,000	19	63.6	− 5.3	95	12†	27	28	44	2.88	+ 1.59	1.28	0	8	15	11	5	nw.	U. S. Forest Service.
Canton	Lincoln	1,248	16																	John H. Holsey.
Cascade Springs	Fall River	3,422	3	65.9	.....	98	15	39	25	44	4.69	.....	1.22	0	8	18	4	9	w.	Fred Noerenberg.
Castlewood	Hamlin	1,685	5	65.0	.....	92	14†	34	28	46	3.26	.....	1.44	0	11	6	6	19	s.	M. N. Bradley.
Centerville	Turner	1,229	14	68.8	− 2.9	96	14	38	28	40	4.09	+ 0.81	1.31	0	9	5	21	5	se.	Frank Williams.
Clark	Clark	1,779	17	65.6	− 3.1	100	15	37	27	40	1.76	− 1.09	1.09	0	7	13	14	4	w.	O. H. La Craft.
Cottonwood	Stanley	2,414	3	68.8	.....	103	15	36	28	43	2.41	.....	0.86	0	8	15	14	2	se.	Experiment station.
Custer	Custer	5,316									3.12	.....	0.92	0	10	4	9	18	w.	R. P. Imes.
Daviston	Perkins		2	65.2	.....	96	20	27	26	41	4.19	.....	1.70	0	10	11	11	9	se.	G. G. Davis.
Deadwood	Lawrence	4,535	2	61.5	.....	94	15†	28	28	40	3.55	.....	0.90	0	10	19	3	9	.....	R. E. Grimshaw.
Deerfield	Pennington	6,000	2								2.55	.....	0.92	0	11	14	10	7	w.	Frank E. Miller.
De Smet	Kingsbury	1,726	18	69.9	+ 0.6	97b	15	40b	28	33b	2.25	− 0.37	1.00	0	4	21	7	3	nw.	J. O. Purinton.
Dowling	Stanley	2,250	2	68.0	.....	103	20	33	28	43	1.80	.....	0.60	0	7	13	10	8	se.	M. P. Dowling.
Dumont	Lawrence	6,195	2								3.63	.....	0.70	0	13	14	11	6	sw.	A. B. Wood.
Eales	Potter										2.18	.....	0.84	0	9	13	13	5	se.	A. H. Peterson.
Edson	Perkins			67.2	.....	101	14†	35	28	42	1.67	.....	0.55	0	8	18	4	9	ne.	J. C. Stoner.
Elk Mountain	Custer	4,700	2								4.33	.....	1.15	0	10	14	7	10	se.	James E. Blaine.
Ellingson	Perkins																			A. C. Ellingson.
Englewood	Lawrence	5,723	2								3.70	.....	0.80	0	13	8	15	8	sw.	T. J. Cummins.
Eureka	McPherson	1,884	2	66.7	.....	96	14	32	28	38	3.57	.....	1.15	0	10	5	25	1	se.	Experiment station.
Fairfax	Gregory		7	69.8i	.....	102i	15	34i	28	43i	2.83	.....	0.70	0	10				.....	U. G. Stevenson.
Faulkton	Faulk	1,595	16	67.8	− 1.2	102	15	35	28	37	3.63	+ 1.20	1.44	0	8	14	9	8	se.	Miss Belle Talcott.
Flandreau	Moody	1,565	21	66.3	− 2.4	91	14†	34	28	43	3.19	− 0.12	1.02	C	7	4	14	13	s.	W. A. Harris.
Forestburg	Sanborn	1,231	19	69.2	− 1.3	104	15	33	28	52	4.28	+ 2.03	1.65	0	9	18	10	3	se.	S. S. Judy.
Frederick	Brown	1,371	3																	J. E. Jeffers.
Gannvalley	Buffalo		13	69.3	− 3.6	105	15	34	28	49	3.19	+ 0.12	1.24	0	8	9	18	4	sw.	V. P. Drips.
Greenmont	Lawrence	6,430	2								4.39	.....	1.00	T.	15	8	17	6	w.	H. C. Hoffbuhr.
Greenwood	Charles Mix		17	71.8	− 2.5	104	15	38	28	46	2.30	− 0.58	0.69	0	6	18	9	4	e.	T. C. Williamson.
Hardy Ranger Station	Lawrence	6,600	2																	Mrs. Ennie A. Gundlach.
Harveys Ranch	....do	6,282	1								3.19	.....	1.01	T.	7	11	13	7	w.	Jerome Harvey.
Hermosa	Custer	3,278	5	67.2	.....	103	16	32	26	52	2.27	.....	1.00	0	7	14	11	6	.....	S. M. Booth.
Highmore	Hyde	1,890	15	66.8	− 4.7	103	15	31	28	46	2.52	+ 0.14	1.10	0	6	14	10	7	se.	Experiment station.
Hopewell	Stanley		1	67.9f	.....	106	15	35i	28	42i	2.75	.....	1.30	0	7	13	9	9	.....	E. R. Myers.
Howard	Miner	1,564	19	65.7e	− 3.4	94e	15†	29e	28	45e	4.29	+ 1.59	1.68	0	9	9	15	7	se.	J. J. Cox.
Howell	Hand		9	67.2	.....	106	15	34	28	49	4.87	.....	2.00	0	10	13	16	2	se.	M. A. Shuster, jr.
Huron	Beadle	1,306	29	67.6	− 1.5	102	15	36	28	41	2.82	+ 0.18	1.84	0	9	9	14	8	se.	U. S. Weather Bureau.
Ipswich	Edmunds	1,530	14	65.4	− 4.3	98	15	36	28	38	4.11	+ 1.14	1.17	0	8	19	7	5	nw.	J. B. Taylor.
Kadoka	Stanley	2,467	2	68.6e	.....	104e	15	38e	28	40e	3.86	.....	1.65	0	5	11	6	14	nw.	Rev. D. S. Brown.
Kennebec	Lyman	1,689	18	69.6	− 2.7	107a	15	34a	28	47a	5.92	+ 3.84	2.12	0	9	18	7	6	.....	R. C. Van Horn.
Kidder	Marshall	1,295	7	64.6	.....	95	15	34	28	47	2.31	.....	0.90	0	7	21	2	8	s.	H. C. Schussler.
Kimball	Brule	1,788	22	67.7	− 3.3	98	15	35	28	37	3.39	+ 0.61	1.30	0	9	20	5	6	se.	G. D. Rose.
La Delle	Spink	1,400	14																	E. L. Ebbert.
Lead	Lawrence	5,200	2	61.8	.....	90	20	31	28	33	3.36	.....	0.59	0	11	10	13	8	.....	E. F. Irwin.
Lemmon	Perkins	2,345	2																	O. C. Olsen.
Manderson	Shannon																			W. A. Spencer.
Marion	Turner	1,447	10	68.8	− 2.3	97	14	36	28	38	6.92	+ 3.99	2.71	0	12	7	20	4	se.	M. H. Dains.
Marston	Sully		3	67.2	.....	104	15	31	28	46	2.93	.....	0.75	0	7	12	13	6	se.	John S. Walker.
Mellette	Spink	1,300	16	66.4	− 3.5	102	15	37	28	42	4.15	+ 1.26	2.00	0	10	14	13	4	se.	Frank A. Howe.
Menno	Hutchinson	1,325	14	68.6	− 2.6	99	15	37	28	39	3.90	+ 1.31	1.05	0	11	11	10	10	se.	J. H. Swanton.
Milbank	Grant	1,148	20	64.9	− 3.7	93	15	37	28	41	3.08	+ 0.27	0.84	0	10	13	2	16	nw.	I. T. Patridge.
Mitchell	Davison	1,312	17	67.1	− 3.4	101	15	34	28	42	3.56	+ 1.05	1.60	0	12	12	13	6	se.	C. W. Downey.
Mobridge	Walworth					98	14				3.48	.....	1.95	0	8	15	11	5	se.	Thomas J. Morris.
Murdo	Lyman	2,300	3	68.4	.....	104	15	36	28	40	4.75	.....	2.50	0	5	20	5	6	nw.	L. C. Bode.
Oelrichs	Fall River	3,339	19	68.3	− 2.6	102	15	40	28	46	3.39	+ 2.19	1.20	0	6	11	19	1	ne.	J. E. Strouse.
Onaka	Faulk	1,600									6.01	.....	3.97	0	9	10	17	4	.....	H. P. Camp.
Orman	Butte	2,920	5	67.2	.....	99	13†	34	28	41	1.88	.....	0.46	0	12	9	18	4	e.	U. S. Reclamation Service.
Ottumwa	Stanley		3																	J. W. Bretz.
Parkston	Hutchinson	1,400									1.98	.....	0.82	0	10	20	5	6	.....	W. C. Kempfer.

TABLE 1.—*Climatological data for August, 1911. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***South Dakota*—Contd.**																				
Pierre	Hughes	1,572	19	69.4	− 3.7	104	15	39	28	40	2.20	+ 0.19	0.92	0	7	8	14	9	e.	U. S. Weather Bureau.
Plankinton	Aurora	1,528	17	.....	.....	.....	.....	.....	.....	.....	2.42	− 0.11	1.16	0	12	10	16	5	se.	W. G. Andrews.
Pollock	Campbell	.....	5	63.9	.....	94	14	31	28	48	4.20	.....	1.25	0	12	.....	.....	.....	.....	J. H. Jones.
Rapid City	Pennington	3,251	23	65.6	− 3.5	97	15	36	28	37	2.01	− 0.10	0.75	0	13	9	12	10	se.	U. S. Weather Bureau.
Redfield	Spink	1,295	13	66.7	− 2.7	102	15	35	28	44	2.24	− 1.26	1.33	0	9	15	7	9	se.	A. S. Hall.
Rochford	Pennington	5,228	1	.....	.....	.....	.....	.....	.....	.....	3.03	.....	0.69	0	12	10	10	11	sw.	Mrs. M. E. Deffenbaugh.
Rosebud	Todd	2,600	17	66.6	− 5.1	97[b]	14	30[b]	28	40[b]	3.52	+ 1.70	1.37	0	11	11	13	7	se.	W. M. Ege.
Roslyn	Day	.....	5	64.0	.....	95	15	35	28	39	6.09	.....	2.20	0	11	11	10	10	se.	O. O. Floren.
Selby	Walworth	.....	3	66.0	.....	92[a]	15	33[a]	28	37[a]	3.41	.....	1.66	0	8	12	13	6	nw.	Miss Gertrude Hall.
Sioux Falls	Minnehaha	1,400	20	68.4	− 1.9	94	12†	38	28	39	8.07	+ 5.02	2.47	0	16	6	13	12	s.	J. H. Bechtold.
Sorum	Harding	.....	.....	63.9	.....	98	31	28	28	42	1.73	.....	0.57	0	11	19	3	9	se.	M. S. Eberhart.
Spearfish	Lawrence	3,647	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	O. A. Martin.
Stephan	Hyde	1,840	7	67.0	.....	102	15	33	28	43	4.29	.....	2.62	0	4	10	8	13	se.	Rev. A. Mattingly.
Tama	Meade	.....	2	68.8	.....	101	20	34	28	39	1.93	.....	0.60	0	9	.....	.....	.....	se.	J. J. Daly.
Tyndall	Bonhomme	1,418	14	70.1	− 1.9	100	15	37	28	33	3.09	− 0.53	1.19	0	10	12	15	4	se.	F. F. Chladek.
Vale	Butte	2,765	3	66.8[a]	.....	98[a]	15	35[a]	28	45[a]	2.29	.....	0.90	0	5	16	10	5	nw.	U. S. Reclamation Service.
Vermilion	Clay	1,222	10	71.5	− 1.3	96	15	40	28	35	3.19	− 0.21	1.06	0	9	18	9	4	s.	Prof. E. C. Perisho.
Waters Ranch	Lawrence	4,000	1	.....	.....	.....	.....	.....	.....	.....	2.48	.....	0.77	0	12	10	9	12	nw.	George Waters.
Watertown	Codington	1,735	17	64.6	− 2.5	94	15	34	28	45	2.82	− 0.57	1.30	0	12	12	12	7	s.	Robert Q. Wood.
Wentworth	Lake	.....	18	66.7	− 2.6	92	14	35[a]	28	38	5.00	+ 2.12	1.90	0	10	20	8	3	se.	R. C. Zimmerman.
Wessington Springs	Jerauld	1,410	11	69.7	− 0.7	102	15	38	28	38	2.72	+ 1.01	1.25	0	8	5	20	6	s.	Mrs. N. J. Dunham.
White Lake	Aurora	1,646	2	.....	.....	.....	.....	.....	.....	.....	2.88	.....	0.93	0	9	10	13	8	e.	Mrs. G. A. Rogers.
Winner	Tripp	2,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. L. Rawson.
Yankton	Yankton	1,234	37	69.6	− 3.2	99	15	42	28	32	4.03	+ 0.91	1.39	0	9	4	20	7	e.	U. S. Weather Bureau.
Minnesota.																				
Pipestone	Pipestone	1,710	11	64.9	− 3.8	88	15†	33	28	34	3.55	− 0.60	1.22	0	10	9	19	3	se.	W. S. Campbell.
Colorado.																				
Akron	Washington	4,650	9	.....	.....	.....	.....	.....	.....	.....	0.76	.....	0.44	0	3	.....	.....	.....	.....	Ira M. Barnhouse.
Albion Lake	Boulder	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.12	.....	0.63	0	10	14	16	1	e.	Fred R. Dungan.
Alma	Park	10,238	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Anna B. Osborne.
Arriba (near)	Lincoln	5,238	5	69.4	.....	96	8†	42	25	39	0.97	.....	0.52	0	6	11	17	3	s.	C. A. Creel.
Auldhurst	Teller	8,500	1	.....	.....	.....	.....	.....	.....	.....	2.01	.....	0.52	0	11	8	19	4	s.	Mrs. Alice A. Auld.
Bennet (near)	Arapahoe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. Egelhoff.
Boulder	Boulder	5,347	15	69.3	− 1.3	98	8	42	28	41	1.24	− 0.25	0.74	0	9	15	13	3	.....	O. H. Wangelin.
Burlington	Kit Carson	4,160	8	72.2	.....	99	8	42	28	42	3.56	.....	1.07	0	11	6	22	3	se.	W. P. Davis.
Cassells	Park	8,445	1	.....	.....	.....	.....	.....	.....	.....	1.45	.....	0.43	0	7	18	12	1	w.	Harriet M. Cassell.
Castle Rock	Douglas	6,220	19	64.9	− 1.8	95	8	36	3	49	1.73	− 0.42	0.57	0	6	9	7	15	s.	Thos. P. Vaughan.
Cheesman	Jefferson	6,890	8	65.1	.....	89	8	41	29	42	2.13	.....	0.50	0	6	15	14	2	w.	J. G. Thornburg.
Cheyenne Wells	Cheyenne	4,279	17	73.3	+ 0.5	101	20	46	28	40	2.36	− 0.02	1.30	0	6	20	7	4	s.	J. W. Adams.
Cope	Washington	.....	14	65.5	− 7.7	94	14	42	25	36	6.31	.....	1.60	0	9	13	14	4	s.	A. A. Williams.
Corona	Grand	11,660	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Weather Bureau.
Denver	Denver	5,272	39	70.3	− 0.1	97	8	45	25	39	1.08	− 0.26	0.67	0	6	13	18	0	s.	Do.
Edgewater	Jefferson	5,450	3	69.0	.....	99	8	42	3	46	1.78	.....	1.00	0	8	20	11	0	.....	Dr. N. P. Levin.
Estes Park Fish Hatch.	Larimer	8,000	2	.....	.....	.....	.....	.....	.....	.....	2.12	.....	0.55	0	11	0	17	14	w.	G. H. Thomson.
Fort Collins	....do	4,985	29	66.2	− 2.0	95	8	37	26	49	0.59	− 0.62	0.54	0	4	10	20	1	.....	Colorado Agri. College.
Fort Lupton	Weld	4,907	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. W. Benedict.
Fort Morgan	Morgan	4,319	13	70.4	− 1.9	103	8†	37	25	56	1.21	− 0.54	0.60	0	3	10	18	3	se.	Della M. Scott.
Frances	Boulder	9,300	6	60.2	.....	86	8	33	3†	39	2.65	.....	1.20	0	14	.....	.....	.....	.....	C. W. Barry.
Frys Ranch	Larimer	7,500	1	59.0	.....	87	8	32	25	47	1.95	.....	0.75	0	9	16	14	1	w.	Norman W. Fry.
Georgetown	Clear Creek	8,550	9	.....	.....	.....	.....	.....	.....	.....	1.81	.....	0.41	0	11	4	22	5	.....	H. L. Corbett.
Greeley	Weld	4,649	2	69.1	.....	98	8	40	26	50	0.86	− 0.10	0.54	0	4	21	10	0	e.	Nelson Renvolds.
Grover	....do	5,076	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George M. Blake.
Hartsel	Park	7,670	2	.....	.....	.....	.....	.....	.....	.....	1.38	.....	0.44	0	8	12	13	16	.....	Emily Kleinknecht.
Hawthorne	Boulder	6,000	2	.....	.....	.....	.....	.....	.....	.....	1.20	.....	0.50	0	6	17	14	0	.....	B. E. Chesebro.
Holyoke (near)	Phillips	3,745	15	.....	.....	.....	.....	.....	.....	.....	2.00	− 0.21	0.78	0	9	13	15	3	se.	A. C. Canble.
Idaho Springs	Clear Creek	7,534	11	62.6	.....	88	8	37	27	40	1.85	− 0.07	0.66	0	9	5	21	5	w.	J. J. Willis.
Keota	Weld	4,966	.....	.....	.....	.....	.....	.....	.....	.....	0.62	.....	0.41	0	3	17	9	5	e.	I. S. Griffin.
Laporte	Larimer	5,053	20	.....	.....	.....	.....	.....	.....	.....	0.50	− 0.83	0.28	0	2	.....	.....	.....	.....	P. A. Taft.
Leroy (near)	Logan	4,380	22	.....	.....	.....	.....	.....	.....	.....	1.68	− 0.49	0.54	0	6	.....	.....	.....	.....	Chas. Green.
Longmont	Boulder	4,980	10	68.0	− 0.6	98	8	39	24†	50	0.76	− 0.42	0.37	0	8	18	13	0	w.	Great Western Sugar Co.
Longs Peak (near)	Larimer	8,600	16	54.4	− 0.5	79	8	25	3	44	1.75	− 0.37	0.63	0	9	4	25	2	w.	Enos A. Mills.
Lula Pass	....do	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. McCahan.
Moraine Park	....do	7,776	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. D. Stead.
Platte Canyon	Jefferson	5,492	12	.....	.....	.....	.....	.....	.....	.....	1.60	+ 0.08	0.60	0	6	11	16	4	w.	Denver Union Water Co.
St. Cloud	Larimer	7,750	8	.....	.....	.....	.....	.....	.....	.....	2.41	.....	1.61	0	5	16	15	0	e.	Miss Guilla Sivers.
Sedgwick	Sedgwick	3,573	3	67.4	.....	99[c]	14	40	14	49[c]	3.21	.....	0.85	0	12	14	17	0	ne.	Edwin Lewis, M. D.
Sill Mine	Clear Creek	11,500	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Chas. F. Deininger.
Spicer (near)	Larimer	8,700	1	.....	.....	.....	.....	.....	.....	.....	1.32	.....	0.42	0	7	19	5	7	sw.	Frank W. Murphy.
Sterling	Logan	3,892	2	69.1	.....	98	14†	36	25	47	0.83	.....	0.46	0	4	13	11	7	ne.	Great Western Sugar Co.
Waterdale	Larimer	5,206	8	68.0	.....	100	8	39	28	54	0.76	.....	0.30	0	9	.....	.....	.....	.....	P. H. Boothroyd.
Wray	Yuma	3,512	15	72.7	− 0.8	102	8	39	25	41	0.87	− 1.25	1.20	0	9	13	17	1	.....	J. C. Tuomey.
Yuma	....do	4,138	20	.....	.....	.....	.....	.....	.....	.....	2.82	+ 0.67	1.88	0	4	15	10	6	s.	Matthew Harr.
Nebraska.																				
Ainsworth	Brown	2,521	6	69.0	.....	98	15	37	28	37	3.36	.....	1.36	0	9	5	18	8	sw.	John M. Cotton.
Albion	Boone	1,747	16	71.2[d]	− 0.1	104	15	36	28	44[d]	2.42	− 0.49	0.70	0	11	.....	.....	.....	s.	F. M. Weitzel.
Alliance	Boxbutte	3,968	18	67.6[f]	− 3.2	99[f]	14	33[f]	25	49[f]	2.30	+ 0.50	1.00	0	4	.....	.....	.....	se.	J. A. Keegan.
Alma	Harlan	1,939	16	72.8	− 2.6	98	15†	43	28	40	11.73	+ 8.02	7.55	0	11	18	11	2	s.	W. A. Sharpnack.
Anoka	Boyd	.....	6	71.4	.....	106	15	32	28	49	1.76	.....	0.80	0	8	18	8	5	nw.	W. Whitla.
Arcadia	Valley	2,186	12	.....	.....	.....	.....	.....	.....	.....	3.11	− 0.31	0.98	0	7	8	15	8	se.	J. L. Owen.
Arden	Boone	.....	1	.....	.....	.....	.....	.....	.....	.....	2.97	.....	0.90	0	11	4	24	3	s.	A. E. Johns.
Ashland	Saunders	1,100	29	75.8	+ 0.8	105	16	43	28†	40	1.76	− 2.16	0.80	0	9	17	12	2	se.	Dr. A. S. v Mansfelde.
Ashton	Sherman	2,061	20	.....	.....	.....	.....	.....	.....	.....	2.73	− 0.26	0.89	0	10	20	5	6	s.	F. Rein.
Atkinson	Holt	2,108	6	68.4	.....	91	31	34	28	45	3.08	.....	0.90	0	10	16	9	6	nw.	C. J. Wilson.
Auburn	Nemaha	1,051	19	74.3	− 0.5	105	10†	44	29	44	3.23	− 1.04	1.77	0	6	22	5	4	s.	J. R. Huffman.
Aurora	Hamilton	1,792	19	73.6	− 1.5	102	15	43	28	43	4.97	+ 1.26	1.85	0	6	9	15	7	s.	C., B. & Q. R. R.
Beatrice	Gage	1,235	22	74.6	− 0.4	99	15†	46	28†	34	2.82	− 0.85	1.48	0	8	24	5	2	sw.	W. S. Waxham.
Beaver City	Furnas	2,147	20	71.6	− 3.9	96	15†	44	28	38	9.97	+ 7.13	4.69	0	10	13	14	4	se.	T. M. Davis.
Bellevue	Sarpy	1,210	29	75.0	.....	104	10†	44	28	36	3.17	+ 0.17	1.90	0	9	22	4	5	se.	A. A. Tyler.
Benkelman	Dundy	2,968	13	.....	.....	.....	.....	.....	.....	.....	1.78	− 0.55	0.50	0	6	4	23	4	sw.	R. D. Druliner.
Bertrand	Phelps	2,515	3	.....	.....	.....	.....	.....	.....	.....	6.14	.....	1.43	0	11	13	13	5	ne.	W. F. Dobbin.

TABLE 1.—*Climatological data for August, 1911. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Nebraska—Continued.																				
Blair	Washington	1,122	16	74.2	+ 0.7	101	15	44	28	38	1.84	− 2.09	0.89	0	4	19	8	4	sw.	D. C. VanDeusen.
Bloomfield	Knox		4	69.5		98	15	34	28	34	2.27		0.52	0	8					Dr. L. C. Bleick.
Bradshaw	York	1,715	14								8.64	+ 3.26	4.34	0	7	23	7	1		E. C. Roggy.
Bridgeport	Morrill	3,658	15	67.8	− 3.9	99	14	36	25	50[b]	1.47	− 0.12	0.73	0	4	15	13	3	se.	R. H. Willis.
Broken Bow	Custer	2,477	16	68.0	− 3.8	97	15	37	28	43	3.74	+ 0.23	1.71	0	9	16	2	13	nw.	C., B. & Q. R. R.
Burge	Cherry	2,674	5	68.2		98	14	33	28	46	2.95		0.75	0	7	11	14	6	s.	H. A. Davis.
Cairo	Hall	1,951	3								6.05		1.60	0	7					Elliott Harrison.
Callaway	Custer	2,555	17	69.0	− 2.9	95	8†	41	25†	48	4.48	+ 1.14	1.05	0	10	11	10	10	s.	J. H. Evans.
Cambridge	Furnas	2,258	5	71.8		99	15	42	28	43[a]	6.89		2.05	0	10	14	9	8	e.	Chas. Jensen.
Canton (near)	Sioux		3	67.8[l]		100	15	29	24	57[l]				0					se.	A. E. Hann.
Columbus	Platte	1,442	19	71.4	− 1.2	100	15	42	28	39	4.05	+ 0.40	2.87	0	6	15	8	8	se.	A. L. Rush.
Cozad	Dawson	2,496	3								4.89		1.90	0	8	14	14	3	s.	A. A. Luttin.
Creighton	Knox	1,600																		C. L. Cherry.
Crete	Saline	1,368	28	75.2	+ 1.7	104	15	48	14†	38	3.71	+ 0.13	1.47	0	7	14	6	11	s.	Doane College.
Culbertson	Hitchcock	2,565	25	71.0		100	15	36	28	44[b]	3.29	+ 0.58	1.21	0	11	14	7	10	se.	J. H. Corrick.
Curtis	Frontier	2,553	14	71.4	− 3.5	94	15†	42	25†	36	6.28	+ 3.19	2.00	0	13	11	12	8	ne.	Dr. S. R. Razee.
David City	Butler	1,619	23	73.3	+ 1.7	101	15	42	28	34	2.89	− 0.73	1.95	0	6	7	17	7	se.	S. Clingman.
Dawson	Richardson	945	17	75.5	− 1.1	103	10	45	29	35	4.02	+ 0.34	1.40	0	5	23	4	4	nw.	Mrs. E. I. Atkinson.
Dubois	Pawnee	1,074	6								5.68		2.03	0	8	24	4	3	se.	O. M. Backus.
Dumas	Wheeler		3								2.44		0.98	0	11	11	11	9	s.	J. M. Kenney.
Ellis	Gage	1,430	6								4.24		1.67	0	7					D. J. Wood.
Elmcreek	Buffalo	2,268	4								5.86		2.07	0	9					E. L. Sutton.
Elsie	Perkins	3,382	3								1.81		0.48	0	11					J. F. Brittain.
Ericson	Wheeler	2,029	19								3.68	+ 1.16	1.04	0	11					J. A. Bodyfield.
Ewing	Holt	1,888	20	70.6		106	15	34	28	53	2.93	+ 0.05	1.14	0	11					G. H. Benson.
Fairbury	Jefferson	1,316	37	75.2	− 0.5	106	15	46	28†	39	6.29	+ 2.97	2.29	0	9	15	14	2	ne.	W. F. Cramb.
Fairmont	Fillmore	1,641	18	71.2	− 2.2	102	15	42	28	40	3.79	+ 0.19	1.55	0	6	20	3	8	n.	C., B. & Q. R. R.
Fort Robinson	Dawes	3,764	29	63.2	− 6.9	96	15	35	25	48	2.68	+ 1.11	1.44	0	8	18	11	2	w.	Post surgeon.
Franklin	Franklin	1,820	17	73.2	− 2.2	101	9	40	28	46	8.08	+ 5.02	4.04	0	11	19	8	4	se.	A. R. Peck.
Fremont	Dodge	1,203	32	73.6	+ 0.7	102	15†	42	28	44	1.34	− 2.56	0.77	0	4	12	16	3	se.	Earnest Hahn.
Fullerton	Nance	1,629	9	72.0		104	15	40	28	45	2.12		1.10	0	6	15	16	0	s.	Dr. W. F. Johnson.
Geneva	Fillmore	1,633	21	73.7	− 0.8	104	15	43	28	41	3.83	+ 0.46	2.05	0	6	22	5	4	se.	F. M. Flory.
Genoa	Nance	1,584	36	72.2	− 1.0	102	15	43	28	43	2.54	− 0.42	1.28	0	8	17	9	5	s.	F. W. Parsons.
Gordon	Cherry	3,550	10	65.8[f]		97	14	34	28	50[f]	3.58	+ 1.74	1.14	0	9				sw.	G. F. Williams.
Gosper	Gosper		10								6.21	+ 2.72	2.05	0	10	8	18	5	se.	E. H. Stoll.
Gothenburg	Dawson	2,557	17	70.2	− 3.0	98	12†	42	25	40	3.93	+ 0.60	0.93	0	10	15	3	13	se.	Dr. W. J. Bartholomew.
Grand Island	Hall	1,860	19	71.8	− 2.0	100	15	42	28	40	6.84	+ 2.88	1.83	0	11	12	11	8	s.	E. A. Barnes.
Grant	Perkins	3,405	8	70.6		103	14†	37	28	48	1.64		0.51	0	8	9	16	6	se.	Cyrus Carver.
Greeley	Greeley	2,021	17	70.1		100	15	39	28	40	1.63	− 1.16	0.60	0	9	9	22	0	se.	W. E. Morgan.
Guiderock	Webster	1,646	11								6.27	+ 2.88	4.25	0	8	12	14	5	ne.	J. S. Marsh.
Halsey	Thomas	2,695	9	70.4		99	15	38	25	46	2.39		1.28	0	6	16	6	9	ne.	U. S. Forest Service.
Hartington	Cedar	1,309	21	69.4	− 1.6	98	15	40	27†	36	4.58	+ 0.79	1.45	0	6	12	8	11	nw.	D. E. Ewing.
Harvard	Clay	1,812																		Dr. J. T. Flemming.
Hastings	Adams	1,932	22	71.2	− 2.8	100	15	44	28	39	6.15	+ 2.49	1.80	0	10	19	12	0	nw.	C., B. & Q. R. R.
Hayes Center	Hayes		18	71.8		100	15	42	28	47	4.45	+ 1.17	1.25	0	13	15	13	3	se.	C. A. Ready.
Hay Spring	Sheridan	3,821	25	66.4	− 2.8	99	15	36	25	46	3.57	+ 1.54	1.35	0	9	11	13	7	s.	A. Kadlecek.
Hebron	Thayer	1,458	26	73.2	− 1.4	99	9†	45	28†	38	6.13	+ 2.61	1.93	0	9					Dr. C. M. Easton.
Hemingford	Boxbutte	4,256	2								2.15		0.92	0	7					A. S. Enyeart.
Hendley	Furnas	2,231	7								7.82		2.50	0	10					T. J. Jones.
Hillside	McPherson	3,484	2	67.8		100	15	30	25	53	1.98		0.75	0	8	17	7	7	se.	Mrs. M. R. Lloyd.
Holdredge	Phelps	2,324	20	71.3	− 3.6	98	15†	44	29	39	6.19	+ 2.93	2.75	0	10	17	6	8	se.	C., B. & Q. R. R.
Hooper §	Dodge	1,228	14	72.4	− 1.0	100	14†	35	28	42	1.98	− 2.19	1.03	0	5	14	6	11	se.	Dr. W. H. Heine.
Hull (near)	Banner		1								1.30		0.81	0	8	17	3	11	s.	Mrs. W. P. Miller.
Imperial	Chase	3,278	22	71.4	− 2.2	97	14†	40	25	45	3.45	+ 0.70	1.45	0	13	9	13	9	se.	Robt. Malcom.
Kearney	Buffalo	2,146	24	71.6	− 3.2	98	15†	43	28	37	5.38	+ 2.25	1.58	0	9	12	15	4	e.	City engineer.
Kimball	Kimball	4,697	24	69.8	− 0.2	99	8	38	24	47	0.80	− 0.59	0.35	0	7	13	15	3	s.	F. J. Bellows.
Kirkwood	Rock		16	68.8	− 2.7	101	15	33	28	46	2.86	+ 0.48	1.25	0	6	11	13	7	nw.	Mrs. C. Arter.
Kowanda	Deuell		3								2.94		0.97	0	9					Geo. W. Hulse.
Lamar	Chase		1								2.50		1.25	0	9	20	3	8	se.	R. L. McGaughey.
Lexington	Dawson	2,385	22	70.8	− 1.4	100	15	43	25	40	4.79	+ 1.64	1.46	0	10	20	0	11	se.	Robt. Chadwick.
Lincoln	Lancaster	1,189	32	74.8	+ 0.5	103	15	45	28	34	4.32	+ 0.61	2.42	0	11	15	10	6	se.	U. S. Weather Bureau.
Lodgepole	Cheyenne	3,820	13	70.4	+ 0.1	100	14	38	25	50	1.14	− 0.70	0.36	0	7	12	14	5	se.	R. T. Kidney.
Loup	Sherman	2,067	17	69.1	− 3.6	97	15	36	28	41	2.06	− 1.66	0.56	0	8	23	8	0	se.	Harriet Hayhurst.
Loyal	Custer		3								3.76		1.35	0	5	16	14	1	s.	C. H. Cass.
McCook	Redwillow	2,506	17	72.8	− 3.8	99	15†	39	28	45	4.34	+ 1.69	0.77	0	10	22	4	5	se.	C. G. Coglizer.
McCool Junction	York	1,575	16								4.17	+ 0.63	1.26	0	6					L. L. Slagle.
Madison	Madison	1,585	18	70.2	− 1.6	98	15	40	28	45	2.31	− 1.06	1.10	0	5	13	10	8	se.	Dr. F. A. Long.
Marquette	Hamilton	1,830	32								4.15	+ 0.97	1.47	0	7					John Ellis.
Mary	Brown		1								3.81		1.44	0	11	9	15	7	e.	G. C. Stufft.
Mason City	Custer	2,257	11								2.02	− 1.55	0.46	0	8					J. A. Amsberry.
Miniatare	Scotts Bluff	3,825	2								2.01		1.60	0	3				se.	A. Kennedy.
Minden	Kearney	2,169	34	70.2	− 3.1	99	16	42	28	38	6.46	+ 2.76	1.86	0	11	11	11	9	se.	Joel Hull.
Mitchell	Scotts Bluff	3,950	3	67.6		98	14	35	25	52	0.71		0.45	0	6	15	10	6	e.	U. S. Reclamation Service.
Mullen	Hooker	3,199	1								3.90		1.08	0	11	13	11	7	se.	C. R. Polen.
Nebraska City	Otoe	941	36	73.7	− 0.5	104	10	40	29	38	1.73	− 1.92	1.00	0	3	17	14	0	s.	C., B. & Q. R. R.
Nelson	Nuckolls	1,683	1								5.31		1.80	0	7	15	10	6	s.	Mack I. Koser.
Norfolk	Madison	1,532	30	70.8	− 1.3	101	15	38	27	44	2.53	− 1.27	0.88	0	9	17	11	3	se.	Dr. P. H. Salter.
North Loup	Valley	1,961	23	72.3	− 0.1	103	15	40	28	46	2.95	+ 0.09	0.70	0	9	14	14	3	s.	W. G. Rood.
North Platte	Lincoln	2,841	37	69.4	− 2.8	97	14	41	28	42	2.19	− 0.27	0.84	0	9	11	18	2	se.	U. S. Weather Bureau.
Oakdale	Antelope	1,722	24	69.0	− 2.5	95	15	37	28	35	3.44	+ 0.51	1.05	0	10	9	17	5	nw.	G. S. Clingman.
Omaha	Douglas	1,103	41	75.4	+ 1.0	100	16	48	28	29	0.71	− 2.91	0.38	0	8	7	17	7	s.	U. S. Weather Bureau.
Ord	Valley	2,062	16								3.25	+ 0.16	0.99	0	12	12	9	10	s.	Jas. Milford.
Orleans	Harlan	1,993																		Jas. McGeachin.
Osceola	Polk	1,644																		G. T. Ray.
Palisade	Hitchcock		2								3.55		0.74	0	9					E. E. Young.
Palmyra ** §	Otoe	1,142	19	74.5	0.0	100	10†	50	28†		3.57	− 0.29	1.32	0	7	17	13	1	se.	Thos. Coles.
Pawnee City	Pawnee	1,175	14	74.7		103	10†	43	29	38	5.72	+ 1.74	1.95	0	7	21	8	2	s.	F. A. Barton.
Paxton	Keith	3,060	4								4.68		3.13	0	10	7	20	4	s.	H. D. Lute.
Plymouth	Jefferson	1,419	7	73.6		101	9†	44	28	39	3.84		2.00	0	8	19	6	6	se.	John Ruppel.
Purdum	Blaine		12	68.0	− 3.3	98	15	38	28	42	2.66	− 0.53	1.55	0	10	17	5	9	se.	T. C. Jackson.
Ravenna	Buffalo	2,028	34	71.4	− 1.6	99	15†	40	28	43	4.26	+ 0.92	0.96	0	7	22	7	2	sw.	H. G. Smith.
Redcloud	Webster	1,687	19	73.2	− 2.4	98	9†	42	28	39	6.66	+ 3.67	3.90	0	11	21	2	8	nw.	Chas. S. Ludlow.
St. Libory	Howard	1,887	17								3.09	− 0.34	1.11	0	10	13	16	2	se.	W. I. Meader.
St. Paul	do	1,796	18	72.3	− 2.2	101	15	40	28	42	2.75	− 0.81	1.06	0	10	16	14	1	se.	Paul Anderson.
Santee	Knox		24	71.8	− 2.2	102	15	40	28	49[a]	2.81	+ 0.08	1.25	0	9				se.	Nat H. Neff.
Sargent	Custer	2,339	17	68.6[g]		94	15	40[a]		36[g]	4.65	+ 1.25	1.25	0	6					J. L. Ferguson.
Schuyler	Colfax	1,357	19	74.8		103	15	39	28	40	3.37	− 0.72	2.50	0	7	16	10	5	s.	J. T. Sumner.
Scottsbluff	Scotts Bluff	3,888	5	68.8		100	14	37	25	53	1.04		0.49	0	7	22	5	4	se.	A. B. McCoskey.

TABLE 1.—*Climatological data for August, 1911. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Nebraska—Continued.																				
Seward	Seward	1,435	21	73.0	− 1.9	103	14	40	27	43	3.98	− 0.22	1.25	0	8	9	21	1	sw.	C., B. & Q. R. R.
Sidney	Cheyenne	4,090	19	.....	.....	.....	.....	.....	.....	.....	2.33	+ 0.42	1.11	0	8	23	8	0	se.	John P. Fischer.
Springview	Keyapaha	.....	20	68.2	− 3.3	98	14	35	28	43	3.22	+ 0.07	1.20	0	8	10	14	7	nw.	C. L. Phelps.
Stanton	Stanton	1,472	20	68.1	− 3.7	98	15	39	28	39	3.31	− 0.03	1.87	0	5	17	12	2	nw.	Alfred Pont.
Stratton	Hitchcock	2,804	16	.....	.....	.....	.....	.....	.....	.....	2.55	− 0.05	0.85	0	7	.....	.....	.....	.....	Miss Stella Vennum.
Superior	Nuckolls	1,574	27	.....	.....	.....	.....	.....	.....	.....	3.55	+ 0.49	0.90	0	6	.....	.....	.....	.....	F. V. Bishop.
Syracuse	Otoe	1,059	20	74.5	− 0.3	106	16	43	28†	45	3.41	− 0.34	1.20	0	7	19	10	2	se.	W. N. Hunter.
Table-rock	Pawnee	1,023	23	.....	.....	.....	.....	.....	.....	.....	5.50	+ 2.07	2.45	0	6	21	10	0	se.	E. D. Howe.
Tecumseh	Johnson	1,113	34	75.0	+ 0.3	105	15	41	29	52[b]	2.32	− 1.42	1.45	0	3	.....	.....	.....	.....	F. B. Thurber.
Tekamah	Burt	1,060	22	71.9	− 1.2	101	14	42	28	40	5.00	+ 1.03	1.60	0	6	22	0	9	nw.	Dr. A. D. Nesbit.
Tobias	Saline	1,597	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Frank Ainsworth.
University Farm §	Lancaster	.....	26	74.7	+ 0.3	103	15	42	28	40	2.87	− 1.02	1.08	0	8	17	11	3	.....	S. W. Perin.
Valentine	Cherry	2,613	23	67.6	− 3.7	100	15	36	28	41	3.57	+ 0.75	0.87	0	14	11	17	3	s.	U. S. Weather Bureau.
Wahoo	Saunders	1,187	9	.....	.....	.....	.....	.....	.....	.....	1.41	.....	0.72	0	4	22	8	1	.....	W. T. Mauck.
Wakefield	Dixon	1,387	17	70.2	− 1.6	96	15	37	28	43	2.95	− 0.71	1.40	0	10	20	7	4	s.	I. H. Weaver.
Walthill	Thurston	.....	9	69.6[j]	.....	97	15	40[a]	28	41[j]	4.52	.....	2.00	0	7	.....	.....	.....	.....	A. P. Coleman.
Watertown	Buffalo	2,299	6	.....	.....	.....	.....	.....	.....	.....	4.10	.....	1.02	0	8	11	20	0	nw.	R. E. Swift.
Wauneta	Chase	.....	13	.....	.....	.....	.....	.....	.....	.....	3.07	− 0.17	1.05	0	9	.....	.....	.....	.....	C. D. Fuller.
Weeping Water	Cass	1,080	34	75.5	.....	109	10†	40	29	48	1.95	− 2.08	0.96	0	8	25	2	4	se.	S. W. Orton.
Westpoint	Cuming	1,313	23	73.5	− 0.2	101	14	42	28	44	3.20	− 1.49	1.28	0	4	19	9	3	ne.	J. C. Elliott.
Wisner	....do	1,380	16	.....	.....	.....	.....	.....	.....	.....	3.92	+ 0.40	1.69	0	7	20	8	3	.....	F. C. Evans.
York	York	1,633	21	73.4	− 2.0	104	15	41	28	43	5.41	+ 1.84	2.85	0	7	20	9	2	se.	A. T. Glauque.
Iowa.																				
Afton	Union	1,212	17	73.4	− 0.2	100	10	46	29	33	2.33	− 2.10	0.94	0	6	17	12	2	sw.	Hon. N. W. Rowell.
Allerton	Wayne	.....	9	76.2[d]	.....	101[d]	10	53[d]	24	33	2.10	.....	1.82	0	5	.....	.....	.....	.....	Mrs. Geo. Shriver.
Alton	Sioux	1,305	6	69.6	.....	96	15	40	28	36	4.11	.....	0.97	0	13	10	19	2	sw.	W. S. Slagle.
Atlantic	Cass	1,164	20	73.4	+ 2.1	101	10	45	28†	40	3.95	+ 0.47	1.60	0	8	14	9	8	ne.	Thos. H. Whitney.
Audubon	Audubon	1,301	17	72.4	+ 0.6	100	16	45	28	38	1.83	− 1.89	0.62	0	6	13	10	8	se.	Geo. E. Kellogg.
Bedford	Taylor	.....	11	75.4	+ 1.5	107	15	46	29	46	1.86	− 3.20	1.08	0	5	23	6	2	s.	E. E. Healy.
Centerville	Appanoose	.....	1	75.6	.....	102	10†	45	29	43	1.37	.....	1.15	0	2	24	7	0	e.	Gordon Peacock, jr.
Chariton	Lucas	1,042	16	74.2	+ 1.1	103	10	43	29	45	0.44	− 4.56	0.20	0	3	26	0	5	se.	C. C. Burr.
Clarinda	Page	1,009	21	74.5	+ 0.3	106	10	45	29	43	2.51	− 1.52	1.31	0	6	22	4	5	s.	A. S. Van Sandt.
Corning	Adams	1,117	19	73.7	+ 1.2	102	10†	45	29	37	2.49	− 1.72	1.18	0	5	15	14	2	sw.	Jerome Smith.
Corydon	Wayne	1,101	18	78.2	+ 4.6	105	16	52	23	38	1.32	− 3.00	1.05	0	4	17	12	2	s.	J. J. C. Bowen.
Council Bluffs	Pottawattamie	.....	1	74.0	.....	104	10†	39	28	43	1.47	.....	0.67	0	6	5	16	10	se.	B. W. Crossley.
Creston	Union	1,312	6	73.0	.....	103	10	46	29	42	1.54	.....	0.66	0	8	19	3	9	n.	O. J. Colby.
Cumberland	Cass	.....	12	.....	.....	.....	.....	.....	.....	.....	3.93	− 0.05	1.41	0	5	26	4	1	sw.	J. H. Reppert.
Denison	Crawford	1,180	17	70.6[i]	− 1.3	97[i]	15	44[i]	28	40[i]	3.82	+ 0.06	1.27	0	7	.....	.....	.....	.....	W. C. Van Ness.
Elliott	Montgomery	.....	6	73.2	.....	102	16	42	28	41	2.05	.....	1.00	0	5	19	12	0	se.	Henry Barnes.
Greenfield	Adair	.....	19	73.0	+ 0.6	100	10†	44	28	34	4.93	+ 1.39	2.25	0	8	13	17	1	sw.	R. B. Oldham.
Harlan	Shelby	1,182	12	71.8	− 0.4	100	16	42	28	41	2.54	− 1.68	1.03	0	7	11	17	3	s.	C. A. Reynolds.
Inwood	Lyon	1,474	7	69.2	.....	93	15†	36	28	34	3.73	.....	0.91	0	13	22	8	1	s.	F. B. Hanson.
Lamoni	Decatur	.....	4	74.3	.....	100	16	46	29	43	3.02	.....	0.83	0	5	22	3	6	se.	T. J. Fitzpatrick.
Larrabee	Cherokee	1,266	21	70.0	− 1.2	97	5	34	28	42	3.39	− 0.09	1.20	0	9	17	6	8	sw.	Alonzo Pruitt.
Le Mars	Plymouth	1,224	15	68.9	− 2.6	89	15	42	28	30	3.46	+ 0.58	0.87	0	10	9	19	3	se.	G. A. C. Clarke.
Lenox	Taylor	1,250	16	74.6	+ 1.7	101	10†	47	29	36	2.01	− 2.11	1.15	0	5	23	6	2	s.	J. L. Hurley.
Leon	Decatur	1,120	9	78.4[e]	.....	103[e]	10	52[e]	27	43[e]	1.47	.....	0.93	0	4	.....	.....	.....	se.	Morris Gardner.
Little Sioux	Harrison	.....	6	72.6	.....	101	15	37	28	37	4.20	.....	1.55	0	6	19	6	6	se.	Geo. H. Gibson.
Logan	....do	928	44	73.6	+ 0.9	103	15	44	28	46	2.42	− 1.32	0.68	0	5	12	18	1	sw.	Glenn H. Stern.
Mount Ayr	Ringgold	1,236	18	75.4	+ 1.4	103	16	48	29†	40	3.05	− 0.70	1.30	0	5	16	10	5	.....	A. F. Beard.
Murray	Clarke	.....	20	75.2	+ 2.0	105	10	45	29	40	2.66	− 1.15	1.07	0	6	10	18	3	se.	M. T. Ashley.
Odebolt	Sac	.....	14	73.4	− 0.3	100	15	43	28	41	2.31	− 0.59	0.70	0	8	23	7	1	.....	E. Starner.
Onawa	Monona	1,051	11	73.6	− 0.6	98	15	45	28	36	3.13	− 2.01	0.94	0	9	23	5	3	nw.	C. G. Perkins.
Pacific Junction	Mills	960	12	73.2	− 0.3	104	16	43	28	38	2.11	− 1.72	0.79	0	7	15	16	0	s.	H. H. McCartney.
Rock Rapids	Lyon	1,358	12	68.8	− 1.5	93	15	41	28	39	4.17	+ 1.74	1.08	0	9	.....	.....	.....	.....	W. C. Wyckoff.
Sheldon	O'Brien	1,422	11	73.0[i]	+ 1.7	100[i]	14†	37[i]	27	36[i]	5.00	+ 1.32	1.15	0	12	.....	.....	.....	.....	Dr. A. W. Beach.
Sibley	Osceola	1,212	18	66.6	− 2.3	91	15	39	28	37	4.85	+ 1.19	1.46	0	15	10	18	3	ne.	H. G. Doolittle.
Sioux Center	Sioux	.....	12	68.6	− 2.5	91	15	39	28	35	3.28	− 0.35	0.78	0	10	15	12	4	s.	J. de Ruyter.
Sioux City	Woodbury	1,135	22	71.0	− 1.6	95	15	43	28	32	2.86	− 0.14	0.96	0	9	15	12	4	s.	U. S. Weather Bureau.
Spencer	Clay	.....	1	70.2	.....	97	15	40	29	40	1.75	.....	0.47	0	9	.....	.....	.....	sw.	S. Gillespie.
Thurman	Fremont	.....	14	73.8	0.0	103	10	44	29	37	2.19	− 2.20	0.97	0	6	11	13	7	ne.	C. R. Paul.
Washta	Cherokee	1,157	13	71.6	− 1.0	97	15	38	28	50	2.62	− 0.16	0.90	0	5	21	8	2	s.	H. L. Felter.
Woodburn	Clarke	961	12	74.6	.....	102	10	40	29	44	3.04	− 2.54	2.20	0	8	18	12	1	se.	C. B. McDonough.
Kansas.																				
Abilene	Dickinson	1,157	16	.....	.....	.....	.....	.....	.....	.....	4.20	+ 1.42	1.46	0	6	13	13	5	ne.	T. W. Sherman.
Agricultural College	Riley	1,100	53	75.3	− 1.5	103	9†	44	29	38	5.52	+ 1.90	2.13	0	6	20	5	6	sw.	Prof. J. O. Hamilton.
Alton	Osborne	1,651	9	76.6	.....	105	9†	44	24	39	3.56	+ 0.98	2.00	0	9	17	10	4	s.	H. A. Storer.
Atchison	Atchison	973	20	75.8	0.0	105	9	49	29	40	3.52	− 1.01	2.00	0	4	25	4	2	s.	Prof. M. F. Troxell.
Beloit	Mitchell	1,383	16	75.4	.....	106	9†	43	29	43	4.25	+ 1.51	1.53	0	8	16	12	3	se.	F. A. Slack.
Blakeman	Rawlins	2,894	14	74.2	.....	99	15	39	28	47	2.37	− 0.21	0.83	0	8	17	8	6	ne.	C. L. Henderson.
Blue Rapids	Marshall	1,105	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Norton.
Centralia	Nemaha	1,256	2	75.8	.....	106	10	45	29	43	5.10	.....	1.85	0	7	23	4	4	se.	N. S. Hazen.
Chapman	Dickinson	1,113	7	75.2[e]	.....	103	10	45	29	35	4.82	.....	1.45	0	6	18[g]	4[g]	2[g]	s.	Dr. R. McShea.
Clay Center	Clay	1,203	10	77.1	.....	108	9†	44	29	41	4.68	.....	1.28	0	6	19	1	11	se.	O. L. Slade.
Colby	Thomas	3,138	20	75.1	+ 0.5	105	9†	39	28	47	1.31	− 1.14	0.40	0	5	9	17	5	s.	G. H. Kinkel.
Concordia	Cloud	1,398	27	75.8	− 0.7	106	10	48	29	38	5.78	+ 2.97	1.63	0	10	11	13	7	s.	U. S. Weather Bureau.
Densmore	Norton	2,200	2	75.8	.....	106	9	47	28	42	3.43	.....	0.85	0	11	4	13	14	se.	J. J. Griffith.
Dresden	Decatur	2,731	17	73.8	− 1.6	107	9	45	28†	47	1.82	− 1.06	0.83	0	8	20	3	8	se.	Jacob Bock.
Ellsworth	Ellsworth	1,537	7	76.6	.....	105	10	41	29	43	1.92	.....	1.33	0	4	9	22	0	s.	Geo. Seitz.
Enterprise	Dickinson	1,144	9	77.2	.....	104	11†	45	29	36	4.03	+ 1.25	1.25	0	6	16	8	7	s.	H. O. Wagner.
Eskridge	Wabaunsee	1,412	5	77.2	.....	103	9†	51	29	35	4.38	.....	2.42	0	7	23	7	1	s.	Geo. D. West.
Farnsworth	Lane	2,850	10	75.4	− 1.1	104	20	42	25	46	2.39	− 0.20	1.02	0	9	23	2	6	s.	C. M. Jennison.
Fort Scott	Bourbon	857	36	76.7	− 1.7	100	10†	45	29	40	5.70	+ 1.86	2.17	0	6	19	1	11	se.	E. A. Shaver.
Frankfort	Marshall	1,146	17	76.3	− 0.8	109	10	42	29	41	3.88	− 1.35	2.10	0	5	13	17	1	ne.	E. C. Dunham.
Garnett	Anderson	950	5	78.3	.....	103	11†	49	29	36	3.54	.....	2.04	0	4	13	15	3	s.	D. D. Judy.
Goodland	Sherman	3,687	4	74.4	.....	103	10	42	28	51	2.53	.....	0.66	0	8	17	4	10	.....	C. C. Calvert.
Gove	Gove	2,750	22	75.0	− 1.4	107	20	43	28	41	1.85	− 0.21	0.83	0	8	11	19	1	se.	Jesse Royer.
Hanover	Washington	1,225	14	76.3	.....	106	10	47	29	38	5.54	+ 1.11	2.23	0	6	24	5	2	s.	A. Jaedicke, jr.
Harrison	Jewell	1,804	10	73.8	− 1.5	101	9	42	29	40	4.49	+ 1.49	1.40	0	10	19	3	9	ne.	Mahlon Tegley.
Hays	Ellis	2,000	43	75.3	− 1.6	104	20	45	24	44	4.47	+ 1.44	1.43	0	9	16	8	7	se.	G. K. Helder.
Hill City	Graham	2,134	3	75.4	.....	110	9	44	23	47	4.30	.....	3.75	0	6	23	4	4	s.	I. R. Mort.
Horton	Brown	1,188	22	75.6	0.0	104	10	50	29	41	4.06	− 0.06	2.22	0	4	20	7	4	s.	Mrs. S. C. Belden.
Hoxie	Sheridan	2,700	13	75.5[d]	− 0.9	108	9	44	22	42	3.31	+ 0.67	2.20	0	6	11	18	2	se.	I. L. Vinson.

TABLE 1.—*Climatological data for August, 1911. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Kansas*—Continued.**																				
Jewell	Jewell	1,540	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. A Shinn.
Lawrence	Douglas	997	43	77.0	− 0.3	103	9†	50	30	34	2.94	− 1.34	1.15	0	7	20	8	3	se.	Prof. H. P. Cady.
Leavenworth	Leavenworth	913	67	78.4	+ 2.2	105	10	54	30	32	3.24	− 0.97	2.15	0	4	26[a]	3[a]	1[a]	s.	Dr. A. F. Yohe.
Lebanon	Smith	1,812	13	75.8	− 0.6	99	9†	48	28	35	4.60	+ 2.00	2.78	0	6	26	1	4	s.	E. V. Bower.
Leoti	Wichita	3,300	.....	74.8[a]	.....	105	20	46	25	44	.....	.....	.....	0	6	12[a]	8[a]	4[a]	se.	Fred Burnham.
Lindsborg	McPherson	1,333	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. Fredrickson.
Mankato	Jewell	1,784	2	74.4	.....	103	15	43	24	36	3.10	.....	0.90	0	9	0	20	11	ne.	W. F. Isaac.
Minneapolis	Ottawa	1,259	21	75.2	− 2.0	104	10	47	29	35	5.47	+ 2.33	2.27	0	6	11	17	3	s.	J. L. Steele.
Moran	Allen	1,098	15	76.8	− 1.2	100	18	48	29	37	4.77	− 0.18	3.04	0	6	20	8	3	se.	C. J. Norton.
Natoma	Osborne	1,834	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	5	21	9	1	s.	C. O. Hunt.
Norton	Norton	2,284	13	74.5	− 0.1	103	9	45	27	40	3.42	+ 0.98	1.29	0	10	13	16	2	se.	Sim Sleffel.
Oberlin	Decatur	2,539	24	.....	.....	.....	.....	.....	.....	.....	2.13	− 0.76	0.68	0	9	19	11	1	sw.	I. K. Huber.
Oketo	Marshall	1,194	3	76.0	.....	105	10	49	29	39	6.02	.....	1.90	0	9	14	13	4	se.	J. A. Church.
Olathe	Johnson	1,032	16	77.8	+ 1.2	105	11	50	29	37	3.21	− 1.50	1.39	0	8	20	6	5	se.	Dr. S. B. S. Wilson.
Osage City	Osage	1,081	12	76.9	.....	103	10	46	29	39	3.58	+ 0.73	1.95	0	7	21	2	8	s.	W. C. White.
Ottawa	Franklin	926	17	78.2	+ 2.0	106	11	47	29	40	3.92	− 0.91	2.55	0	7	26	2	3	s.	H. F. McDougal.
Phillipsburg	Phillips	1,939	20	74.6	− 2.3	102	15	45	24	41	7.14	+ 4.33	3.86	0	7	18	8	5	se.	N. E. Bailey.
Plainville	Rooks	2,156	5	.....	.....	.....	.....	.....	.....	.....	3.75	.....	1.40	0	5	23	6	2	s.	P. D. Spellman.
Pleasanton	Linn	862	9	75.5	.....	100	10†	47	29	35	3.70	.....	2.25	0	4	25	5	1	sw.	B. F. Blaker.
Republic	Republic	1,495	8	74.6	.....	105	9	43	29	41	2.44	.....	0.87	0	6	.....	.....	.....	.....	J. W. Ambrose.
Russell	Russell	1,834	12	76.6	− 0.8	105	16†	45	24	40	5.13	+ 2.48	1.56	0	7	22	6	3	s.	Robert Brebner.
Russell Springs	Logan	.....	1	76.8	.....	107	20	43	28	43	1.12	.....	0.35	0	6	23	4	4	se.	D. J. Hutto.
St. Francis	Cheyenne	3,288	3	73.8	.....	105	8	42	25	49	3.48	.....	1.13	0	10	10	17	4	se.	J. E. Uplinger.
Salina	Saline	1,227	27	77.2	− 2.0	106	10	44	29	44	3.29	+ 0.36	1.85	0	6	17	12	2	se.	Prof. A. W. Jones.
Scott	Scott	2,971	5	76.4	.....	107	20	47	28	44	1.39	.....	0.92	0	8	18	9	4	s.	J. B. Loughran.
Smith Center	Smith	1,800	1	.....	.....	.....	.....	.....	.....	.....	8.00	.....	6.44	0	6	13	16	2	se.	W. H. Nelson.
Topeka	Shawnee	997	25	77.2	+ 1.2	104	10	52	29	32	4.44	+ 0.15	2.38	0	10	22	7	2	s.	U. S. Weather Bureau.
Valley Falls	Jefferson	913	12	76.8	+ 1.4	106	9†	49	29	35	4.33	+ 0.14	3.00	0	5	25	5	1	se.	Miss Nettie Maxwell.
Vinland	Douglas	880	2	.....	.....	.....	.....	.....	.....	.....	2.58	.....	1.25	0	6	.....	.....	.....	.....	A. Schick.
Wakeeney	Trego	2,456	28	76.2	− 0.8	106	20	45	28	53	2.29	− 0.01	0.71	0	7	23	4	4	s.	A. S. Peacock.
Wallace	Wallace	3,303	41	75.5	.....	106	9	42	28	45	0.90	− 1.07	0.32	0	5	4	26	1	se.	M. T. Griggs.
Wamego	Pottawatomie	1,002	18	.....	.....	.....	.....	.....	.....	.....	6.20	+ 1.56	2.70	0	4	18	11	2	s.	M. L. Stone.
Missouri.																				
Amoret	Bates	850	3	77.7	.....	105	10	48	29	38	3.05	.....	1.60	0	5	17	11	3	s.	Darby Fruit Farm.
Appleton City	St. Clair	853	22	78.4	+ 0.9	109	10	48	30	43	2.86	− 1.14	1.25	0	6	10	21	0	ne.	T. C. Brown.
Arlington	Phelps	695	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George V. Randolph.
Arthur	Vernon	767	19	76.2	+ 0.1	103	10†	44	29	45	3.12	− 0.90	2.03	0	4	18	11	2	sw.	J. T. Armstrong.
Avalon	Livingston	.....	27	77.2	+ 0.6	104	11	46	29	40	3.97	+ 0.01	2.25	0	5	25	6	0	sw.	F. G. Ashbaugh.
Bagnell	Miller	594	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. S. Brockman.
Bethany	Harrison	881	22	73.2	− 1.0	98	10	45	29	36	2.27	− 1.90	1.16	0	3	27	4	0	sw.	W. H. Skinner.
Bolivar	Polk	1,070	24	74.9	− 1.9	102	10	47	29†	39	4.83	+ 1.17	1.33	0	7	18	5	8	sw.	E. Waltz.
Boonville	Cooper	600	36	.....	.....	.....	.....	.....	.....	.....	2.12	− 1.28	1.26	0	5	18	3	10	se.	C. Randecker.
Brunswick	Chariton	652	33	77.0	+ 1.6	103	10	49	30	33	2.30	− 1.72	0.68	0	8	15	6	10	se.	Louis Benecke.
Columbia	Boone	784	22	75.5	+ 0.8	105	9	50	30	37	1.86	− 1.18	1.10	0	5	21	7	3	se.	U. S. Weather Bureau.
Conception	Nodaway	982	28	75.2	+ 1.3	101	15	47	29	36	3.07	− 0.81	1.60	0	3	18	12	1	se.	Fr. Adhelm Hess.
Crocker	Pulaski	.....	1	74.9[i]	.....	109	9	43[i]	30	47[i]	2.62	.....	1.33	0	7	17	4	10	se.	Ira H. Stephens.
Eldorado Springs	Cedar	750	7	76.6	.....	102	10	45	29	41	3.88	.....	1.30	0	5	16	10	5	se.	Samuel Graham.
Fayette	Howard	725	29	77.3	+ 1.3	107	9	50	30	35	1.94	− 1.02	0.90	0	6	15	13	3	.....	Prof. T. Berry Smith.
Fulton	Callaway	818	21	75.8	− 0.5	107	9	48	29†	38	3.56	+ 0.28	1.62	0	5	11	14	6	.....	Miss Isabelle Clark.
Glasgow	Howard	618	33	.....	.....	.....	.....	.....	.....	.....	1.71	− 1.39	0.98	0	5	22	1	8	se.	J. J. Shaughnessy.
Grant City	Worth	1,130	20	75.4	.....	104	10†	49	29	44	2.92	− 1.01	1.45	0	4	25	4	2	sw.	W. H. Campbell.
Harrisonville	Cass	912	40	77.4	+ 2.1	105	9†	51	29	40	7.33	+ 3.28	2.65	0	8	16	2	13	s.	A. J. Sharp.
Hazelhurst	Livingston	.....	19	.....	.....	.....	.....	.....	.....	.....	1.41	− 2.11	0.60	0	5	.....	.....	.....	.....	W. H. Baker.
Hermann	Gasconade	482	38	.....	.....	.....	.....	.....	.....	.....	5.80	+ 2.90	2.52	0	10	14	4	13	e.	C. T. Maushund.
Houston	Texas	1,280	20	72.8	− 2.4	100	9	43	30	40	6.00	+ 2.66	2.20	0	8	8	14	9	s.	E. Dempsey.
Jefferson City	Cole	628	30	75.3	− 1.4	109	10	47	30	39	4.29	+ 1.70	3.05	0	8	21	0	10	e.	Miss Emma Swift.
Kansas City	Jackson	963	22	78.0	+ 2.2	104	9	55	29	29	2.31	− 2.44	1.50	0	4	15	13	3	s.	U. S. Weather Bureau.
Kidder	Caldwell	1,017	21	76.5	+ 1.4	103	10	48	29	39	2.45	− 1.55	1.10	0	7	22	6	3	sw.	J. F. Sharp.
Lamonte	Pettis	863	24	77.8	.....	106	9†	46	30	43	2.52	− 0.96	1.28	0	5	13[c]	4[c]	11[c]	se.[c]	Dr. W. E. Walker.
Lebanon	Laclede	1,265	23	74.7	− 1.7	99	10	48	29†	28	4.53	+ 1.33	1.58	0	6	10	9	12	se.	M. W. Serl.
Lexington	Lafayette	813	30	76.8	+ 1.2	102	9†	48	30	41	2.46	− 0.81	0.80	0	8	21	0	10	s.	J. W. Keithley.
Liberty	Clay	864	24	78.2	+ 1.9	106	9	49	29	41	2.30	− 1.96	1.33	0	3	19[a]	8[a]	3[a]	e.[a]	W. C. Wilmott.
Lockwood	Dade	1,088	17	75.0	.....	98	10	50	29	30	9.27	+ 5.40	4.05	0	6	20	5	6	se.	C. S. Crow.
Marshall	Saline	779	21	78.0	+ 2.1	106	9†	48	30	42	2.09	− 1.57	0.82	0	7	25[a]	4[a]	1[a]	e.[a]	Dr. W. H. Black.
Maryville	Nodaway	1,160	22	75.0	+ 1.4	101	11†	49	29	34	2.86	− 1.60	1.59	0	5	23	0	8	s.	J. R. Brink.
Mount Vernon	Lawrence	1,480	35	74.3	− 3.5	100	10	49	30	30	12.04	+ 7.94	4.00	0	9	12	12	7	sw.	J. R. White & Son.
Nevada	Vernon	860	18	.....	.....	.....	.....	.....	.....	.....	3.04	− 0.87	1.59	0	4	22	8	1	sw.	C. Jewell.
Oregon	Holt	1,113	57	73.9	− 1.2	100	10	45	29	37	3.58	− 0.72	1.43	0	5	22	7	2	se.	Tom Curry.
Osceola	St. Clair	738	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. E. Matthews.
Pattonsburg	Daviess	.....	2	.....	.....	.....	.....	.....	.....	.....	2.16	.....	1.26	0	3	22	0	9	ne.	Wm. Burton.
Rolla	Phelps	1,092	31	75.6	+ 0.6	105	9	50	30	35	2.09	− 1.68	1.05	0	7	14	9	8	se.	Prof. P. J. Wilkins.
St. Charles	St. Charles	614	34	76.2	− 0.2	101	10	50	30	33	3.93	+ 0.98	1.93	0	9	11	12	8	s.	L. C. Saeger.
St. Joseph	Buchanan	825	40	76.8	.....	103	9†	53	29	32	4.43	+ 0.58	2.24	0	5	19	10	2	se.	U. S. Weather Bureau.
St. Louis (1)	St. Louis City	567	40	75.9	− 1.4	96	9	52	30	25	3.51	+ 0.85	1.48	0	11	11	10	10	s.	Do.
St. Louis (2)	do	578	1	76.2	.....	96	9	52	30	29	4.73	.....	1.34	0	10	14	8	9	se.	St. Louis University.
Sublett	Adair	1,000	32	74.3	− 0.1	98	10	43	29	33	2.22	− 1.05	1.87	0	2	13	16	2	sw.	Lewis Spriggs.
Trenton	Grundy	812	17	75.4	+ 0.4	97	9†	49	29	33	1.85	− 1.69	0.66	0	7	26	1	4	s.	W. H. Estes.
Unionville	Putnam	1,072	19	74.8	− 0.9	100	10	45	29	44	2.90	− 1.17	2.00	0	3	13	8	10	s.	Geo. W. Davis.
Warrensburg	Johnson	883	32	78.5	+ 1.7	104	9†	50	30	36	2.10	− 1.42	0.87	0	5	22	6	3	s.	A. F. Smithson.
Warrenton	Warren	865	21	74.8	− 1.8	102	9†	47	30	31	5.89	+ 3.15	1.96	0	10	15	4	12	se.	Dr. John H. Frick.
Warsaw	Benton	700	8	77.4	.....	104	10	44	29	44	3.57	.....	0.97	0	7	19	9	3	ne.	Dr. J. R. Smith.
Wheatland	Hickory	920	20	.....	.....	.....	.....	.....	.....	.....	3.55	+ 0.23	1.95	0	6	15	7	9	s.	Mrs. S. A. Jackson.

[a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 6, Missouri Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																	
Arapahoe	Bighorn						.16																.06										0.22
Barnum	Powder						.85											T.						T.									0.85
Basin	Bighorn				.23		.05																	T.									0.28
Bennett	North Platte										.05	.18					.26						.54										1.03
Big Creek Station	do											.03	.24					.32	.10	.02	.17	.06	.67	T.	T.							T.	1.61
Burns	South Platte				.33			.25																									0.58
Casper	North Platte																																
Centennial	do		T.		T.	T.					.22	.19	.02	.02			.14		.05	.02			.27	.02								.02	0.97
Cheyenne	South Platte	T.	.06	T.	T.					.47	.43		.06			T.	T.	.11	T.		.07			.15					T.				1.35
Chugwater	North Platte					.13				.07	T.	.20							.18														0.58
Clark	Clarks Fork	.05	.45	T.	.24	.29	.02						T.					T.					T.	.08								.04	1.17
Cody	Bighorn	.19	.21	.06	.14	.04	.08					.03	T.												.10								0.85
Crazy Creek	Clarks Fork	.01	.07	.02	.23	.13	.07	.05	.01															.08									0.67
Dome Lake	Tongue		.45	.35			.40			.30														.20									1.70
Douglas	North Platte		.10			T.	.38					.24				T.							.07	.06									0.85
Dubois	Bighorn			T.				T.																									T.
Eatons Ranch (o)	Tongue	.08	.37				.27				.18							T.					T.										0.90
Echeta	Powder																																
Elk Mountain	North Platte		.06								.50						.03						.35										0.94
Encampment	do		T.									.20				T.	T.	.05	.01			.15		.30	.03								0.74
Ervay	do																																
Fort Laramie	do		T.	.21			.10											T.						.06	T.								0.37
Fox Park	do	T.	T.							T.	.01	.04	T.			T.	T.	.40	T.	.24	.14		.30	.15						T.			1.28
Germania	Bighorn		T.		.05	.04	.04																										0.13
Gillette	Powder		.05	.03	.01	T.	T.				.07		T.					T.	T.		.10				.25			.13					0.64
Horse Creek	North Platte																																
Hunters Station	Powder		.21	.08		.14	.16	.04			T.		T.														T.						0.63
Hyattville	Bighorn																																
Jireh	Niobrara		.02		.22	.05	.32				.04											T.	.22	.26									1.13
Kirtley	do		.23		.06	.02	.35																	.19									0.85
Kirwin	Bighorn	T.	.20	.15	.20	T.	.20	T.			T.	.05	T.	T.					T.					T.									0.80
Knowles	Bel' Fourche	.16		.24		.35	.06				.09			.03						.54					.32								1.79
Lagrange	North Platte		.03			.25				.48	.16								.03		.08		.05										1.08
Lander	Bighorn		T.	T.	T.	T.	.15				T.	.01					.04						.02										0.22
Laramie	North Platte	T.			.04	.06			.01			.16	.30	.01		T.	.02	.01	.01	.11	T.		.06	.04									0.83
Leo	do																																
Lolabama Ranch	Bighorn																																
Lovell	do	.02	T.	.15	.06	.07	.11																	T.									0.41
Lusk	Niobrara						.41																.26	.35									1.02
Manville	do		.06		.45	.05	.31				T.	.02											.06	.18	.02								1.15
Moorcroft	Bel' Fourche	.15	.30	.01	.35	.40	.05			.03				T.					.16					.10	.15			.05					1.75
Moore	North Platte	T.			T.	T.	.01			.01	.25	.14				T.	.21		T.	T.				.13									0.75
Newcastle	South Fork Cheyenne		.41	.12	.18	.21	.67												.48	.36				.16	1.10			T.					3.69
Pathfinder	North Platte		T.	T.	T.	.06					T.	T.					.05						T.										0.11
Phillips	do																																
Pine Bluff	South Platte	T.		T.	T.		T.			.12	.13		.04						.30	.04	.02	T.	T.										0.65
Powell	Bighorn	.03	.03		.10	.10		.25																									0.51
Rawlins	North Platte										.05					T.	T.	T.	T.	T.	.03		T.										0.08
Riverton	Bighorn		.22				.40				T.	T.					.36	T.					.02										1.00
Rocky Point	Powder		.14	.20		1.34	.31	.02			.02		.15				.40	.21	.10					.30									3.19
Saratoga	North Platte						.09				.13	.12	.01				.47		.04		T.		.25	.01									1.12
Seven Mile Creek	do		.02		.04	T.	T.			T.	.52				.40	.01	.16		.03		T.	T.	.16	.06									1.40
Sheridan	Tongue	.18	.21		.02	.25	.04			.01	.01	T.	T.					T.						.52			T.					T.	1.24
Shoshone Dam	Bighorn	T.	.40	T.	.12	.01	T.					T.	T.											T.									0.53
Soldiers Home	Powder	.02	.13	.03	.09	.07	.05	.01																	.08			.12					0.60
South Pass City	North Platte		.02				.35										T.	T.					T.										0.37
Thermopolis	Bighorn		.09	.10	.02		.05																		.10								0.36
Verona	Tongue	.18	.30				.23																	.53									1.24
Wheatland	North Platte	T.			T.		.12			T.		.09	.02	T.			T.			.11				.09									0.43
Wiants Ranch	do		T.		T.							.05					.22				.05		.27										0.59
Wiley	Bighorn								.14								.05	.27					.05	.11									0.62
Woodrock	Tongue		.39	.41	.33	T.	.16	.15			.06								.04						.10		.03	.05					1.72
Worland	Bighorn	T.	.11		.01	.01	.03			T.		T.	T.					.02							.02								0.20
Wyncote	North Platte		.64				.16					T.	T.				T.						T.	T.									0.80
Yellowstone Park	Yellowstone		.04	.01	.51	.02	.07																	.01								T.	0.66
(1) Fountain	Madison					.15																											0.15
(2) Gallatin	do		.55	.02		.11	.07		T.				.05																				0.80
(3) Grand Canyon	Yellowstone		.15	T.	.10	.05	.01	.01				T.	T.											.08									0.40
(4) Lake Yellowstone	do		.05	.01		.05																			.10								0.21
(5) Norris	do		.41	T.	.11		.12																	.04									0.58
(6) Riverside	Madison	.12	.24						.40	.16			.11										.12										1.15
(7) Soda Butte	Yellowstone		.02	.02	.43	.13	.03	.02					.03											.03									0.71
(8) Sylvan Pass	Bighorn	.03	.44	.14	.10		.11																		.12								0.94
(9) Thumb	Yellowstone		.04	T.	.03	.01																			.10								0.18
(10) Tower Falls	do		T.		T.	.07	.06						.06											.03									0.22
(11) Upper Geyser Basin	Madison	T.	T.	T.	T.																												T.
Montana.																																	
Adel	Missouri	.15	.39	.12	.44	.02	.09	.55	.02	.71	.03		T.	.01					T.			.06				.01	.80	.26					3.66
Agricultural College	Gallatin																																
Augusta	Sun		.15	.32	.26	.15	.05			.21							.02									.15	.24	.15					1.70
Babb	Milk	.04	.34	.03	.33	.19	.45	.25	.15	.05							.03				.01	.11				.22	.30	.33					2.83
Badger Creek	Marias																																
Bald Butte	Missouri	.07	.44	.10	.28	.18		.46		.32	.10													.05			.47							2.47
Bigtimber	Yellowstone		.44				.30	.24	.08		.12													.40										1.58
Bigtimber Creek	do	T.	.63	.17	.40	.13	.07	.05	.06	.13	.31		.09	T.									.11	.45			.33	.02						2.95
Billings	do		.21	.02	.04	.10	.17																	.18			.17							0.89
Blackleaf	Missouri																																
Bloomfield	Yellowstone																																
Boulder Nursery	Jefferson	.23	.08	.01	.26	.16	.01	.11		.12	.02													.04			.01					.04	1.09
Bowen	do	.07	.11	.20	.16	.12	.09	.15																T.								.08	0.98
Bridger	Yellowstone	.02	.07	.04		.19	.26	.08																			.01						0.67
Broadview	do		.54		.60		.10	.03																.50									1.77
Bushy	do		.04	.04			.24	.47			.02	.06								.10				.20	.10		.08	.11					1.46
Busteed	do	T.	.28		T.	.40	1.15	T.	.06	T.		T.		T.						.02			T.	.41			.30	.07					2.69
Cabin Creek	Jefferson		.02	.07	T.	.47																											0.56
Canyon Ferry	Missouri		.55		.07			.05		.03				.06										.02			.11	T.					0.89
Cascade	do	.01	.74	.27	.40	.07	.05	.04	.02	.30	.04			T.					T.			.18				T.	.60	.05					2.77
Chessman Reservoir	do		.40	.07	.25	.28	.30	.15		.06																	.04						1.55

TABLE 2.—*Daily precipitation for August, 1911. District No. 6*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Montana—Contd.																																	
Chester	Missouri	.04	.62		.04		.24	.12	.03					.15													.10						1.34
Chinook	Milk		.07		.12	.16	.10						.14			.30											.08	.02					0.99
Chouteau	Missouri																																
Clear Creek	Milk	T.	.12		.88	T.	.98		T.	.16	.24		.02			.23						T.			.14	.12		T.				2.89
Clemons	Missouri	.11	.31	T.	.60	.05	.15	.22	.07	.07	.02								.02			.07	T.				.31	.33					2.33
Clydepark	Yellowstone		.36		.16	.12	.06	.14	T.	.04	.16	T.												.43									1.47
Conrad‖	Marias	.42	.16	.16	.02	.08	.12	.08	.79						.25	.05										.10	.22						2.45
Copper	Musselshell			1.16	.01	.20	T.	.05	T.	.15	.12														.15						T.	1.84
Crow Agency	Bighorn			.04	.03		.03	.11				.06	.02											.35	.03		.11	.09					0.87
Culbertson	Missouri			T.		.23		T.			.16	T.							T.		T.						.42	.18					0.99
Cummings	Bighorn		.52	T.		.05	.51	.16																.24									1.48
Cut Bank	Marias	.08		.14	.08		T.	.16																		.14							0.60
Decker	Tongue																																
Denton	Missouri																																
Dillon	Jefferson	.02	.31	.09	.47	.36	.10	.02		.03							T.	T.					T.	.03							.01		1.44
Dirty Creek	Musselshell	.03	.75	.01	.68	.60	.18	.03		.18	.19																.01						2.66
Dry Creek	Missouri	.17	.06		.07		.06	T.	.14	.08	.04	T.	T.									T.	.05							T.	T.	0.67
Dry Wolf Camp	do	.01	1.13	.13	.74	.23	.30		.10	.12					T.				.36			.02				T.	.40						3.54
East Gallatin River	Gallatin		.75	.02	.12	T.	.18	.22			.25		T.	T.										.15	.05						T.	1.74
Ekalaka	Little Missouri.		.17	.23	.07	.08	.15		.10	.10	1.42						.18	.04		.09					.05		.09					2.77
Elkhorn	Jefferson		.44	T.	.35	.09	.04	.10		.19	.01													.03								1.25
Evans	Missouri																																
Fallon	Yellowstone		.08	.10			.22		.60	.09	.40								T.			T.					.55						2.04
Fish Creek	Jefferson	.18		.99	.36		.35	.11	T.	.20	.08													.04							T.	2.31
Flathead Creek	Yellowstone	*	*	*	*	.93				.37	.13												.03	.28	.10		.07						1.91
Forsyth	do																																
Fort Benton	Missouri		.35	.25		.60		.10							.55	.20		.15								.50		.60					3.30
Fort Shaw	Sun	.02	.57		.06	.05	.25		.25																		.40						1.60
Foster	Bighorn	T.	.30	.03	.06	.03	.10	.12	T.					T.			.05		T.					.21			T.	T.					0.90
Garneil	Musselshell		.75	.05	.06	.75	.35	.70	.35	.35												.10					.15	.15				.15	3.91
Glasgow	Milk		*	.52		.37				*	.53				.20										.10	.11						1.83
Glendive‖	Yellowstone		.80	.04				.18	.10	.22																.38	.11						1.83
Goldbutte	Marias	.19	.20	.21	.31	.05	.47	.18	.02	.10			T.	T.	.03	T.				.02		.06				.06		.03					1.93
Graham	Powder	.14	.13	.07	.04	.65	.37			.26			.02				.03	T.	.53						.76			.02					3.02
Grayling	Madison		.06	T.	.16	.30	.04																										0.56
Great Falls	Missouri	.03	.61	.73	.14	.08	.40	.08	.16	.05			T.	T.	T.			T.								.21	.18						2.67
Half Moon Pass	Musselshell																																
Half Way House	Missouri		.76	.10		.08		.12		.07	.37		.10											.21			.05					.03	1.89
Harlowton	Musselshell	*	1.24		.04		T.			.25																	.24						1.77
Havre	Milk	T.	.20		.74		.09	.01		.14	.01		.31		.20	.41						.01				.07	.05						2.24
Helena	Missouri	.26	.12		.11	.02	.15	.01		.01			T.		T.				T.			T.		.11		.08	T.						0.87
Highwood	do																																
Huntley	Yellowstone		.29					.28																.16			.17						0.90
Jones Canyon	Gallatin	.27	.23		.42	T.	.11			.11														.49							T.		1.63
Jordan	Missouri																																
Knobles Ranch	Milk	.10	.22		.34	.13	.07	.74	.07						T.					.09	.02	.11				.09	.06						2.04
Lewistown	Missouri		1.74	T.	.11	.21	.08	.15	.02	.05	.02		.18	.02		.34	.46		.18			T.				T.	.42	.17					4.15
Livingston	Yellowstone																																
Lonetree	Missouri	.02	1.10		.48	.18				.48	.02											.10				.06	.54						2.98
Malta	Milk	T.	.29		T.		.02	T.		.09	T.		.08	.28	T.	.53	T.					T.				T.	.15					T.	1.44
Medicine Lake	Missouri		.32	.08		.13		.19	.11	.04	.10			.04		.56	.04									.12	.38						2.11
Melstone	Musselshell		.60	.15		.10	.15												.70							.20							1.90
Mildred	Yellowstone		T.	.61	T.		.06	.32	T.	.22	.25					.02			.02				T.	T.			.17						1.67
Miles City	do			.08		T.	.04	.90		.12	.08			.01					.15					.01			.17	.03					1.59
Norris	Madison					.10	.40	.05			.25	.10																					0.90
Nye	Yellowstone	.04	.15		.08	.33	.11	.13	.10	.09	.07	T.	.10	.03	.01									.08	.20								1.52
Olsen Creek	Jefferson	.23	.52		.40		.34																	.19		.03							1.71
Pipestone Pass	do	T.	.58	.05	.10	.04	.01	.21	.10	.10												.01	.15										1.35
Poplar	Missouri			.57		.13		.10		T.	T.						.59										.35	T.					1.74
Red Lodge	Yellowstone	.14	.22	.15	.21	.12	.12	.03	T.	T.		T.	.12					T.						.25			.12	.06				T.	1.54
Renova	Jefferson	T.	.16	.07		.03	.10	.06		T.		T.	T.											.08								T.	0.50
Ryegate	Musselshell		.78			.55			.05		.15													.05		.15	.10						1.83
Seville	Marias			.17	.12		.58		.07	.03																.09	.20	.03					1.29
Shelby	do	.09	.02		.03	.02	1.09	.02		.12				.02	.06						.02					.04							1.53
Sidney	Yellowstone			.16		.10	.20		.01	.06	.33	.01		.01								T.			T.	1.01	.01				.20	2.10
Spokane Ranch	Missouri	.46	.08	.02			.05						.22											.03		.07						0.93
Springbrook	Yellowstone		.01	.18	T.	T.			.36	.10	.22			T.			T.			T.						.88	T.					1.75
Stearns	Missouri	.86		.35	.25	.60																			.72							2.78
Sunlit Farm	Milk	T.	.25		T.	.05	.18			.20	.03	T.	T.	.01		.19						.02				.04						.01	0.98
Three Forks	Madison																																
Tokna ‡ ‖	Yellowstone			.45		.43	.48		.55																		.60	.12					2.63
Trail Creek	do	.37	.32	.06		.03	.55	.03	.01	.27														.15									1.79
Twin Bridges	Jefferson																																
Utica	Missouri		1.36	T.	.30	.45	.48		.03	.14	.05		.32		.21	.93		.60									.18	.32					5.37
Valentine	Musselshell	T.	.60	T.	.25		.03	.11	.06				T.		T.	.34	.43	T.									.27	.06					2.15
Valier	Marias	1.03	.75	.06	.10	.02	.12	.29	.10	.35					.02					.10						.27	.19	.03					3.43
Virginia City	Jefferson and Madison.		.13		.14	.60	.13	.04	.06			.06	T.											.05									1.21
Wall Rock Mount'n	Missouri	.15	.57		.05			.10		.30			.11											.12								T.	1.40
Warm Springs C'k	Madison	.21	.08	.08	.22	.15	.39	.11		.01																							1.25
Wheaton	Musselshell																																
Wilder	Missouri		.24	T.	.16	.43	T.	T.	.10	T.			T.	.03		.01	.02									T.	.39	T.					1.38
Wolf Creek	do	.02	.41	.21	.31	.05	.21	.29	.01	.12				.11	T.							.02					.55	.06					2.37
Wolf Point	do																																
Woodville	Jefferson	.27	.25		.53	.04	.05	.27		.30			T.											.29									2.00
North Dakota.																																	
Aplin	Knife	T.	.01	1.72	.01		.29	T.	.72	.06	.09	T.			T.		T.	.04			T.	T.					.25	.02					3.21
Beach	L'le Missouri		.06	.42		.01	.09	.01	.91	.13	.30											T.					.36		T.				2.29
Belfield	Heart			.28					.60	.07	.34																.17						1.46
Berthold Agency	Missouri	T.		1.63	T.	T.	.42		.25	.20	.04										T.	T.			T.		.52	T.					3.06
Bismarck	do		.17	.65	.07	T.	.37	.01	.58	.05	.23			.22	T.			.37						T.			T.	T.		T.			2.72
Broncho	Knife			1.71			.07	.04	1.23	.01	.21						.07										.43						4.77
Buford	Missouri		.14	.08		.12	.14	T.		.04	.32	.01		T.			.01	T.				.02				.03	.95	.03					1.89
Dickinson	Heart	.38		.31	.34		T.	.03	.55	.04	.35												T.		T.		T.	.18					2.18
Edgeley	James		.60	.85			.01	.32	.50	.01	.40				.83			.08				.30			.09		.11						4.10
Epping	Missouri			.52			.28		.19	.11				.70								.10				1.00	T.					2.90
Fullerton	James		.29	.96	T.			.32	.30	.04	.26				.38			.24				.02			.20		.06		T.	T.			3.07
Garrison	Missouri		*	2.18	.23		T.		.45	.32	.22				.74	.03						T.					1.48	.03					5.68
Haley	Grand		.28	.12		T.	.30		.09	.30	.55				.03			.03				T.					T.	.15		T.			1.85

TABLE 2.—*Daily precipitation for August, 1911. District No. 6*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
North Dakota—Con.																																	
Hettinger	Cannon Ball	.03	.20	.10	....	.05	1.10	.07	.03	.46	.01	....	....	....	....	.01	....	....	....	....	....	....	.01	....	....	....	....	....	....	....	....	....	2.07
Howard	Missouri	T.	.12	....	....	.21	....	.02	T.	T.	.05	T.	T.	T.	T.	.67	.17	....	.16	....	....	.02	....	....	....	.27	.42	.01	....	....	....	....	2.12
Jamestown	James	.15	.10	1.07	.08	....	2.25	....	.80	....	.30	....	....	.80	....	.70	....	....	....	....	....	.10	....	.30	....	....	....	.07	....	....	....	....	6.72
Lamoine	Missouri	....	....	1.99	T.	....	....	.52	.58	....	.16	....	T.	....	.23	.17	....	....	....	....	....	....	....	....	....	....	T.	.17	....	....	....	....	3.82
McHenry	James	....	....	....	....	....	....	2.06	.32	.13	.28	....	....	....	.07	.27	....	....	....	....	....	.56	....	....	....	....	.15	.10	....	....	T.	....	3.94
Manfred	Sheyenne	....	....	1.35	....	....	....	.66	.10	.30	....	....	....	....	.45	.15	....	....	....	....	....	.03	....	....	....	....	.22	.07	....	....	....	....	3.33
Marmarth	L'le Missouri	....	.11	.17	....	T.	.12	....	.16	.06	.62	....	....	....	....	....	.07	....	.06	....	....	....	....	T.	.15	....	.10	T.	....	....	....	....	1.62
Marstonmoor	James	.19	T.	.93	.08	T.	T.	T.	1.02	T.	.26	....	....	....	.11	.70	....	T.	....	....	....	.43	....	....	T.	T.	T.	....	T.	T.	....	....	3.72
Medora	L'le Missouri	....	....	.15	....	....	....	.52	.20	.21	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20	....	....	....	....	....	1.28
Melville	James	....	....	1.50	.18	.16	.04	.68	.40	....	.13	....	....	....	.76	.10	....	....	....	....	....	.46	....	....	.04	....	.31	....	....	....	....	....	4.76
Mott	Cannon Ball	....	.08	.24	....	.08	.42	....	.63	.10	.33	....	....	....	....	T.	....	....	....	T.	.04	....	....	....	....	....	.02	....	....	....	....	....	1.94
Napoleon	Missouri	....	....	.05	1.07	....	.18	.07	.26	....	.15	....	....	....	.09	....	....	.14	....	....	T.	....	....	....	.14	....	....	....	.04	....	....	....	2.19
New England	Cannon Ball	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Rockford	James	....	....	1.98	.34	....	.90	.80	....	.42	....	....	....	.20	....	....	....	....	....	....	.80	....	....	....	....	....	.08	.15	....	....	....	....	5.67
New Salem	Heart	....	....	1.28	.07	.04	.06	.05	1.02	.13	.16	T.	....	.03	....	....	....	.45	....	....	....	....	....	....	....	....	T.	.03	....	....	T.	....	3.32
Orange	Cannon Ball	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Schafer	L'le Missouri	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Steele	Missouri	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washburn	do	....	....	1.35	....	....	T.	....	.92	T.	.10	....	....	....	.05	....	....	.02	....	....	....	T.	....	....	....	....	.09	T.	....	....	....	....	2.53
Williston	do	....	....	.22	....	.04	.03	.16	....	.09	.03	T.	....	.43	....	T.	....	....	....	....	....	.02	....	....	....	.51	.73	.01	....	....	....	....	2.27
South Dakota.																																	
Aberdeen ‖	James	.05	T.	1.80	.10	....	.10	1.65	.62	.10	.10	.05	T.	T.	.25	....	T.	.05	T.	....	....	....	T.	....	.25	.20	....	T.	....	....	....	....	5.32
Academy	Missouri	....	.78	.92	.03	....	.51	....	....	T.	T.	.11	T.	....	....	....	....	....	....	....	....	....	.03	.08	.21	....	....	....	....	....	....	....	2.67
Alexandria	James	....	....	.74	....	....	1.11	....	....	....	.15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	....	....	....	....	....	2.50
Ardmore ‖	Cheyenne	....	....	.12	.50	1.00	1.00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.70	....	....	....	....	....	....	....	....	3.32
Armour	Missouri	....	....	.50	....	....	1.23	....	....	....	....	.30	.10	....	....	....	....	....	.20	....	....	....	....	....	.10	....	....	....	....	....	....	....	2.43
Bellefourche	Cheyenne	....	.26	....	....	.05	.22	....	....	....	.35	....	....	....	....	....	....	....	....	.75	....	....	....	....	.36	....	....	....	....	....	....	....	1.99
Brookings	Big Sioux	....	....	1.22	....	....	.35	.25	.20	.45	....	....	....	....	.88	....	.16	....	.11	....	....	....	....	....	.02	....	.17	....	....	....	....	....	3.81
Camp Crook	L'leMissouri	....	.89	.07	....	....	....	....	....	1.28	.36	....	....	....	....	....	.09	....	....	.08	.03	....	....	....	....	....	.08	....	....	....	....	....	2.88
Canton	Big Sioux	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cascade Springs	Cheyenne	....	.24	....	T.	.64	1.02	....	....	....	....	.03	....	....	....	....	....	....	T.	1.22	.25	....	T.	.65	.64	....	....	T.	....	....	....	....	4.69
Castlewood	Big Sioux	....	.01	1.44	T.	T.	.44	.22	.08	.17	T.	....	T.	....	.37	T.	.11	T.	....	....	T.	....	....	T.	.02	T.	.37	T.	T.	....	.03	....	3.26
Centerville	Missouri	....	T.	.72	T.	....	.37	1.31	.02	.42	T.	.25	T.	.05	.02	....	T.	....	....	....	T.	....	....	T.	T.	T.	.93	....	....	T.	....	....	4.09
Clark	James	....	T.	1.09	T.	T.	.20	.10	.04	....	....	....	....	....	....	....	.12	T.	....	....	....	....	....	....	.10	....	.11	....	....	....	....	....	1.76
Cottonwood	Missouri	....	T.	....	....	.36	.50	....	....	....	....	....	....	....	....	....	....	T.	.25	.33	T.	....	.03	.27	.66	....	T.	.01	....	....	....	....	2.41
Custer	Cheyenne	....	....	.22	....	.27	.65	....	....	....	.02	....	....	....	....	....	....	.06	.60	.16	....	.23	.83	....	....	....	....	.08	....	....	....	....	3.12
Daviston	Grand	....	.70	.10	....	1.25	....	....	....	15	1.70	....	....	....	....	....	.07	.05	....	.02	....	....	.10	....	....	....	.05	....	....	....	....	....	4.19
Deadwood	Cheyenne	....	.60	.25	....	.20	.70	....	....	....	.05	....	....	....	....	....	....	.35	....	.25	....	....	....	.45	.55	....	....	.15	....	....	....	....	3.55
Deerfield	do	....	.12	.02	.08	.42	.50	....	....	....	T.	....	....	.06	....	.01	....	T.	....	.44	T.	....	....	.13	.74	....	....	.03	....	....	....	....	2.55
De Smet	James	....	T.	1.00	....	....	1.00	....	T.	T.	....	T.	....	....	....	....	T.	....	....	....	....	....	....	....	....	.15	.10	....	....	....	....	....	2.25
Dowling	Cheyenne	....	.30	T.	....	.15	.60	....	....	....	....	....	....	....	....	....	....	....	....	.08	.20	....	T.	.12	.35	....	....	T.	....	....	....	....	1.80
Dumont	do	.68	.50	.22	.08	.15	.70	....	....	....	.04	....	....	....	....	....	....	.05	....	.49	.04	....	....	.23	.35	....	....	.10	....	....	....	....	3.63
Eales	Missouri	....	.37	.32	....	T.	.08	.76	....	.12	T.	....	....	T.	....	....	.06	.06	....	.05	.06	....	....	....	.35	....	T.	....	....	....	....	....	2.18
Edson	Cheyenne	.52	.55	.06	....	....	T.	....	....	....	.03	....	....	.05	....	....	....	....	....	.05	....	....	.02	....	.39	....	....	T.	....	....	....	....	1.67
Elk Mountain	do	....	.20	.02	.07	.08	.75	....	....	....	....	....	....	....	....	....	T.	1.15	.68	....	....	....	....	32	1.01	....	....	.05	....	....	....	....	4.33
Ellingson	Grand	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Englewood	Cheyenne	....	.40	.20	.10	.20	.80	....	....	....	....	....	....	....	....	....	....	.20	.30	.20	.10	....	.10	.10	.80	....	....	.20	....	....	....	....	3.70
Eureka	Missouri	....	.34	.81	....	....	.02	1.15	.42	.39	.05	....	T.	....	....	....	T.	.01	....	....	....	.05	....	....	.33	....	T.	T.	....	....	....	....	3.57
Fairfax	do	....	....	.40	....	....	.63	.70	....	....	....	.38	....	....	....	....	.01	.07	.20	.02	....	....	....	T.	.23	....	....	.19	....	....	....	....	2.83
Faulkton	James	....	.60	1.44	....	.04	....	.53	....	.23	....	....	....	....	....	....	.20	.01	....	....	....	....	....	....	.58	....	T.	....	....	....	....	....	3.63
Flandreau	Big Sioux	....	....	1.02	....	....	.15	.65	....	.55	....	....	....	....	.50	....	.02	....	....	....	....	....	....	....	....	....	.30	....	....	....	....	....	3.19
Forestburg	James	....	.57	.60	....	T.	1.65	....	....	.55	....	T.	....	.11	.02	....	....	....	.08	....	....	....	T.	T.	.10	....	.60	....	....	....	....	....	4.28
Frederick ‖	do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Gannvalley	Missouri	....	1.24	.03	....	.70	.57	....	.08	T.	....	....	....	....	....	....	....	.07	....	....	....	....	T.	.25	.25	....	....	....	....	....	....	....	3.19
Greenmont	Cheyenne	....	.25	.20	.30	.25	.70	....	....	....	.20	....	....	.15	.10	....	.35	....	.15	.30	....	....	....	1.00	.20	.12	.12	....	....	....	....	....	4.39
Greenwood	Missouri	....	.69	....	T.	....	.49	....	....	.50	....	.16	....	....	....	....	T.	T.	....	....	....	....	....	....	.22	....	....	....	....	.24	....	....	2.30
Hardy Ranger Sta	Cheyenne	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Harveys Ranch	do	....	*	.70	T.	.10	.91	....	....	....	....	....	....	.20	....	....	....	....	.26	....	....	....	.90	....	....	....	....	.12	....	....	....	....	3.19
Hermosa	do	....	.03	....	.01	....	.53	....	....	....	T.	.20	....	....	....	....	....	....	1.00	....	....	....	....	.32	.18	....	....	....	....	....	....	....	2.27
Highmore	Missouri	....	1.10	.75	....	.01	.21	.15	....	....	....	....	....	....	....	....	T.	....	....	....	T.	....	....	....	.30	....	....	....	....	....	....	....	2.52
Hopewell	Cheyenne	....	.48	.19	....	T.	1.30	....	....	....	....	....	....	T.	....	....	.17	....	....	....	....	....	.10	.05	.46	....	....	....	....	....	....	....	2.75
Howard	James	....	.07	.75	T.	T.	1.68	.40	T.	.48	.05	T.	T.	T.	.61	....	T.	....	....	....	....	....	T.	T.	.02	....	.23	T.	....	....	....	....	4.29
Howell	do	....	2.00	1.89	....	.20	.18	.16	....	.03	T.	....	....	....	....	....	.03	.02	....	....	.03	....	....	T.	.33	....	T.	....	....	....	....	....	4.87
Huron	do	....	.72	.11	....	1.26	.58	T.	.03	.02	....	....	T.	....	T.	.01	T.	T.	....	....	.01	....	T.	....	.08	....	....	T.	....	....	....	....	2.82
Ipswich	do	....	.31	1.17	....	....	....	.67	.33	.93	.12	....	....	....	.05	....	....	....	....	....	....	....	....	....	.53	....	T.	....	....	....	....	....	4.11
Kadoka	White	....	.99	....	....	T.	1.65	....	....	....	....	....	....	....	....	....	....	....	.29	....	....	....	....	.50	.43	....	....	T.	....	....	....	....	3.86
Kennebec	Missouri	....	2.12	1.44	....	....	.98	....	.38	....	....	....	T.	.04	.16	....	....	....	....	....	....	.08	.34	.38	....	....	....	....	....	....	....	....	5.92
Kidder	James	....	.20	.90	T.	....	T.	.50	.23	.10	.28	....	....	....	....	....	....	T.	....	....	....	T.	....	.10	....	T.	....	....	....	....	....	....	2.31
Kimball	Missouri	....	.37	1.30	.01	....	.96	....	.17	T.	T.	.07	....	....	....	....	.01	....	....	....	T.	T.	T.	.02	.48	....	....	....	....	....	....	....	3.39
La Delle	James	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lead	Cheyenne	....	.52	.21	....	.46	.55	....	....	....	....	....	....	....	....	....	.02	.35	.15	.17	....	....	....	.25	.59	....	....	.09	....	....	....	....	3.36
Lemmon	Grand	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Manderson	White	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Marion	Missouri	....	T.	1.20	T.	T.	.17	.43	T.	.38	2.71	.20	.01	.04	....	....	T.	....	T.	....	....	....	....	....	T.	.04	1.62	.06	....	....	.06	....	6.92
Marston	do	....	.54	.72	....	.02	.63	.26	....	....	....	....	....	....	....	....	.01	....	....	....	....	....	....	....	.75	....	....	....	....	....	....	....	2.93
Mellette	James	....	.32	2.00	....	T.	.01	.72	.21	.17	T.	T.	....	....	....	....	.03	T.	....	....	....	....	....	....	.60	.03	.06	....	....	....	....	....	4.15
Menno	do	....	.02	.78	T.	....	1.05	....	.05	T.	.30	.32	....	T.	....	....	.12	....	....	....	....	....	....	....	.17	....	.92	.06	....	....	.11	....	3.90
Milbank ‖	Minnesota	....	....	.54	.84	....	.09	.22	....	T.	.33	....	....	....	.14	....	T.	....	.06	....	....	....	....	....	T.	.14	.57	.15	....	....	....	....	3.08
Mitchell ‖	James	....	.70	....	.08	.58	....	1.02	.04	....	.04	.05	....	.10	....	....	....	.13	....	....	....	....	....	.08	.09	....	.65	....	....	....	....	....	3.56
Mobridge	Missouri	.40	T.	....	....	.08	1.95	T.	.40	.10	T.	....	....	....	....	T.	.05	....	....	....	.10	....	....	.40	....	....	....	....	....	....	....	....	3.48
Murdo	White	.05	2.50	....	....	.60	1.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	....	....	....	....	....	....	....	4.75
Oelrichs	Cheyenne	....	....	.22	*	.80	.10	....	....	....	....	....	....	....	....	....	....	....	.57	....	T.	....	....	1.20	.50	....	....	....	....	....	....	....	....	3.39
Onaka	James	.37	3.97	T.	....	T.	.02	.82	.01	.33	.03	T.	....	....	....	....	....	....	....	....	....	T.	....	....	.39	....	....	.07	....	....	....	T.	6.01
Orman	Cheyenne	....	.26	.05	.01	.04	.16	....	....	....	.30	.01	....	....	....	....	....	.03	T.	.45	.10	....	....	....	.46	....	....	.01	....	....	....	....	1.88
Ottumwa	Missouri	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Parkston	James	....	.82	....	.02	.12	.61	.04	....	....	.10	....	....	....	....	....	T.	....	....	....	....	T.	....	.07	....	....	.08	.04	....	.08	....	....	1.98
Pierre	Missouri	....	.92	.08	....	.19	.60	....	....	....	....	....	....	T.	....	....	T.	....	....	....	....	....	.10	.11	.20	....	....	T.	....	....	....	....	2.20
Plankinton	James	....	....	.69	T.	*	1.16	....	.05	T.	.06	.08	....	....	....	....	.03	.02	....	....	.03	T.	T.	.07	.08	....	....	....	....	.15	....	....	2.42
Pollock ‖	Missouri	.28	.55	.60	.15	....	....	1.25	.20	.20	.40	.15	....	....	....	....	....	....	....	....	....	.24	....	....	.10	....	....	.08	....	....	....	....	4.20
Rapid City	Cheyenne	....	.02	....	T.	.26	.40	....	....	....	.06	.04	T.	T.	....	....	.01	.04	.17	.17	.02	....	T.	.75	.04	....	....	.03	....	....	....	....	2.01
Redfield ‖	James	....	.02	1.33	....	....	.11	.20	.10	T.	.14	....	....	....	....	....	.05	....	....	....	....	....	....	.15	.14	....	....	....	....	....	....	....	2.24
Rochford	Cheyenne	....	.29	.07	.03	.60	.69	....	....	....	....	....	....	....	....	....	T.	.09	.06	.35	....	.03	T.	.07	.67	....	....	.08	....	....	....	....	3.03
Rosebud	White	....	.02	.44	....	.06	1.37	....	....	....	....	.05	....	....	.14	....	....	.12	....	.75	....	....	.20	.19	.18	....	....	T.	....	....	....	....	3.52
Roslyn	Big Sioux	....	.10	1.27	....	T.	.13	2.20	.50	.23	T.	....	....	....	....	.35	....	T.	.35	....	....	....	....	....	.45	....	.50	.01	....	....	....	....	6.09
Selby	Missouri	....	.36	.49	....	....	*	1.66	....	.29	.08	....	....	....	....	....	....	.06	....	....	....	....	....	....	.47	....	....	....	....	....	....	....	3.41
Sioux Falls ‖	Big Sioux	.04	....	....	1.05	....	.20	1.00	....	.79	2.47	.10	.40	....	.50	....	T.	.08	.82	....	....	....	....	....	.03	.05	....	.32	.04	....	.18	....	8.07
Sorum	Grand	.29	.07	.03	....	....	.17	.01	....	.57	.35	....	....	....	....	....	.04	.13	....	....	....	....	.06	....	.01	....	....	....	....	....	....	....	1.73
Spearfish	Cheyenne	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Stephan	Missouri	....	*	2.62	....	T.	1.22	....	....	T.	....	....	T.	....	T.	....	T.	T.	....	....	T.	....	T.	.15	.30	....	....	....	....	....	....	....	4.26
Tama	Cheyenne	.38	.40	T.	T.	T.	.05	....	....	....	.04	....	....	....	....	....	.21	.02	T.	.22	....	T.	....	T.	.60	....	....	.01	....	....	....	....	1.93

TABLE 2.—*Daily precipitation for August, 1911. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
South Dakota—Con.																															
Tyndall	Missouri		1.19		.01		.52			.63	.10	.22	T.	.01											.17	.09	.15					3.09
Vale	Cheyenne		.32	T.			.28				.24							T.	T.	.55			T.		.90			T.				2.29
Vermilion	Missouri		.10	1.06		T.		.44		.29		.21	.10				T.									.32		.58			.09	3.19
Waters Ranch	Cheyenne		.38	.04	.02	.06	.23				.09			T.				.77	.08		.15		.07		.51				.08			2.48
Watertown ‖	Big Sioux	.11	.03		1.30		.26	.24	.12		.10				.05		.02		T.							.05		.40		.14		2.82
Wentworth	do			.92			1.24		.04	.42	.11				1.90				.04					.09	.08		.16					5.00
Wessington Springs	James		.30	.44			1.25		.06	T.					.40								.07	.05	.15							2.72
White Lake	Missouri			.93				.68	.10		.11	.18						.38						.15	.23					.12		2.88
Winner	White																														
Yankton	Missouri		.65	.74			.64	.01		.44		.32		T.			T.	T.			T.			T.	.17		.93	T.			.13		4.03
Minnesota.																															
Pipestone	Big Sioux			1.22	.23		.58			.48		.23		.35			.02							T.	.08	.02	.34					3.55
Colorado.																															
Akron	Republican	.20				T.						.44	.12									T.										0.76
Albion Lake	South Platte	.02	.18	.01							.56	.31				.04	.07				.23	.07	.68	T.								2.12
Alma	do																														
Arriba (near)	Republican	.04	T.		T.			T.	T.		.05	.12				.08			T.		.52	T.	.16	T.								0.97
Auldhurst	South Platte				T.	T.				.24	.08	.40			T.	.05		.15	.04	T.	.11	.52	.21	T.	.16				.05			2.01
Bennet (near)	do																														
Boulder	do										.37	.37	.04	.02					.18	.06		.05	.04	.11								1.24
Burlington	Republican	.52	.09		.44		.44				.08	1.07				.54	.10		.05		.12		.11									3.56
Cassells	South Platte	.05									.10	.43							.11	.15	.30	.31										1.45
Castle Rock	do				T.	T.				T.	.20	.57	.41								.21	.11		T.	.23							1.73
Cheesman	do										T.	.50	T.			T.	T.	.50	T.	T.	T.	.50	.50	.03	.10	T.						2.13
Cheyenne Wells	Smoky Hill	T.			T.	1.30						.12	.04					.75					.11	T.	.04				T.			2.36
Cope	Republican			.01	.12	1.60			.12	.60	.70	.71									1.25		1.20									6.31
Corona	South Platte																														
Denver	do									T.	.53	.20				T.		.20			.12	T.	.02	.01	T.	T.			T.		T.	1.08
Edgewater	do										1.00	.22	T.					.30	.01	.20	.01			.02	.02	T.						1.78
Estes Park Fish H'y	do	T.	.40							T.	.04	.25	.09			T.	.15	.13		.09		.05	.25	.55		.12						2.12
Fort Collins	do	.01	T.		T.						T.	.54	.03	T.			T.			T.			T.	.01	T.							0.59
Fort Lupton	do																														
Fort Morgan	do	.37				T.					.60	.24				T.								T.								1.21
Frances	do		.10		.02	.01					1.20	.28	.05			.04	.11	.16	.15			.04	.08	.35	.06							2.65
Frys Ranch	do		.02							T.	.35		.75	.07			.02			.09	.10	.05	.50									1.95
Georgetown	do		.12	T.						.03	.53	.04				.14		.06		.12	.14	.10	.41		.09						.03	1.81
Greeley	do									.29	.54														.01	.02						0.86
Grover	do																														
Hartsel	do	T.								T.	.17	.09								.03	.07	.44	.38					.14			.06	1.38
Hawthorne	do				T.	T.					.35	.50							T.		.03	.02	.11	.19					T.				1.20
Holyoke (near)	do	.26	T.		T.	.10	.02					.78	.06			.33	.35		.08				.02										2.00
Idaho Springs	do		.03			T.				.09	.66		.03	T.	T.	T.	T.	.45	T.	T.	.12	T.	.16	.20	.11				T.			T.	1.85
Keota	do		T.			.02				.19		.41					T.		T.					T.								0.62
Laporte	do										.22	.28																				0.50
Leroy (near)	do	.45									.56	.14	.30	.08		T.			.15													1.68
Longmont	do										.37	.05	.06		.01	.01	.18		.01				.07		T.				T.			0.76
Longs Peak (near)	do		.04		.03							.24	.12				.35					.05	.23	.63	.06							1.75
Lula Pass	do																														
Moraine Park	do																														
Platte Cannon	do										.45	.60									.10	.25	.15	.05								1.60
St. Cloud	do				T.	T.					1.61	.19	.16				T.	T.					.35	.10								2.41
Sedgwick	do		.32		.85	.20	.02			T.	.15	.36	.30	.50		.10	.05	.12	T.	.24												3.21
Sill Mine	do																														
Spicer (near)	do			T.	.02	T.				T.	.08	.10									T.	.25	.30	.42	.15							1.32
Sterling	do				.03							.46				.03			.31													0.83
Waterdale	do	.04									.05	.15	.07			.03	.04		.03					.30	.05							0.76
Wray	Republican	.05	.11							.06	1.20	.15				T.	.08		.11		.06		.05									1.87
Yuma	do	T.	.58			T.					T.	1.88				T.			.31		.05		T.									2.82
Nebraska.																															
Ainsworth	Niobrara		.76		.05	1.36				T.	T.	T.		.09			T.	T.	.49	.36	T.		.11	.09	.05		T.					3.36
Albion	Loup			.70	.16	.06		.04			.08		.11		.03		.24		.22	.52								.26				2.42
Alliance	North Platte	T.	.25		.50	1.00	.55			T.						T.							T.	T.								2.30
Alma	Republican		7.55			.34	2.17	.34											.37	.19	.13		.47	T.	.02			.13	.02				11.73
Anoka	Niobrara		.03	.33	.02		.80			T.		.17									.10			T.	.26				.05				1.76
Arden	Loup		.90				.51		.05			.13	.33	.02			.01	.07	.71			.01		T.			.23						2.97
Ashland	Platte			.80		.05	.05	.11	T.									.19	.05	.01		.08						.42	T.				1.76
Atkinson ‖	Elkhorn			.35			.47	.56	T.		.33	.30		T.				.07	.03	.90	T.			.03	T.	.04							3.08
Auburn ‖	L'le Nemaha	.03		1.77		T.		.10										.13	.03			1.17			T.							3.23
Beatrice	Blue			.50		.05	.40	.02										.20		.10		1.48						.07				2.82
Beaver City	Republican	T.	4.69		1.98		1.42				.04	.28						.25	.35	.13	.44		T.				.39						9.97
Bellevue	Missouri			.60				.35	.01		.08				.02			1.90	.09			.07						.05				3.17
Blair	do			.89			T.	.32	T.		T.	.02							.61					T.				T.	T.		T.	1.84
Bloomfield	do		T.	.35			.52				T.	.50		.18			T.			.02				T.	.30		.29				.11	2.27
Bridgeport	North Platte		T.		T.	.26	.73				.03	T.				.45																1.47
Broker Bow ‖	Loup		.54		.14		.49		.04			.12	.33						.35		.02	1.71											3.74
Burge	Niobrara		.35			.70	.50													.75	.27			.20	.18								2.95
Callaway	Loup	.12	.72		1.05		.70	.19				.27	.67						.49	.22	.05			T.									4.48
Cambridge	Republican		2.05		1.60		1.23				T.	.50	.57					.01	.54	T.	.06	.13		T.	T.			.20					6.89
Canton (near)	North Platte																														
Columbus ‖	Loup			2.87				.11					.14						.11		.76		.06									4.05
Creighton	Missouri																														
Crete	Blue			.60		.26	.02	T.										1.18	.15				1.47				.03					3.71
Culbertson ‖	Republican		.20	.04		1.21	T.	.48				.30	.50				.10	.10	.11	.05		.20		T.	T.							3.29
Curtis	do	.10	.11	.31		1.25	2.00	.50	.26		T.	.64	.36							.10	.08		.02	T.	T.	.55						6.28
David City	Blue			1.95	T.		T.	.05				.03	.03					.30	T.	.3				T.				T.				2.89
Dawson	G't Nemaha		1.40			.55	.64											.10				1.33							T.			4.02
Dumas	Loup		T.	.20	.07		.15		.03		.02	.10		T.		.14	.20	.98	.27	.28		T.	T.	T.				T.				2.44
Elsie	Republican	.01	.04				.06	.42		.01	.02	.45	.20			.11	.48			.01									T.				1.81
Ewing ‖	Elkhorn		1.14		.03				.04			.02	.14			.08	.05	.15	.78	T.				T.	.05		.45						2.93
Fairbury	Blue		.70		.03		1.22	.07									.31		1.48		2.29						.05	.14				6.29
Fairmont ‖	do			.80		.43		T.										.32		.58		1.55						T.	.11			3.79
Fort Robinson ‖	Niobrara			.25		.08	1.44	.28			.02	.05												.51	.05								2.68
Franklin	Republican		4.04		1.58		1.00											.27	.12	.16	.16	.38		.02			.15	.20					8.08
Fremont	Platte			.77				.17	T.			.05	.35		T.																		1.34
Fullerton	Loup		T.	1.10	.27						.17		.25						.17		T.	.16						T.					2.12
Geneva	Blue	T.		.68	T.	2.05	.09												.41		.54							.07					3.83

TABLE 2.—*Daily precipitation for August, 1911. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Nebraska—Contd.																															
Genoa	Loup		1.28				.25		T.		T.	.15			T.			.63	.01	.09		.05		T.			.08					2.54
Gordon	Niobrara		.12	.37		1.14	.68												.15	.55			.07	.34	.16							3.58
Gosper	Republican		.59		.68		2.05					.27	.74				.17		.47	.05	1.16		.03									6.21
Gothenburg	Platte		.14		.16	.38						.52	.42					.80	.93	T.	.39	.09	T.	.10								3.93
Grand Island ‖	do			1.83		.85		T.	.04			.02	.52					.22		1.10	.06	1.47						.63	.10			6.84
Grant	Republican	T.			T.	.14	.17			T.	T.	.51	.08			.05	.04		.22		.43											1.64
Greeley	Loup		.60				.20		.03			.05	.30				.26	.02	.13		.04											1.03
Halsey	do			.27	T.		1.28		.09			.25		.40					.10													2.39
Hartington ‖	Missouri			1.45				.45				T.	.90					.34								42		1.02			T.		4.58
Harvard	Blue																															
Hastings ‖	do			.95		1.02		.12	.04	T.					T.			.35		1.80	.17	1.25	.28					.17				6.15
Hayes Center	Republican	.43	.12			.18	1.25	.02		.10	.55						.42	.16	.53	.65		.02		.02								4.45
Hay Springs	Niobrara		.28		.16	1.35	.93				T.	T.				T.	T.	.13	.25				.18	.20	.09		T.					3.57
Hebron	Blue			.54		.09	1.05	.04	T.						T.			.46		1.93		1.92					.09	.01				6.13
Hemingford ‖	Niobrara			.03		.66	.92	.24				.09										.04		.17								2.15
Hillside	North Platte	.15	.35		.30		.75					.28		.04		T.		.08			.03		T.		T.							1.98
Holdredge ‖	Republican			.50		2.75	.78					.05	.52					.31	.16	.13		.80							.19			6.19
Hooper	Elkhorn			1.03			.40								.05				.22									.28				1.98
Hull (near)	North Platte		.01			.03	.05			.81	.13							.23	.01		.03											1.30
Imperial	Republican	.17	.03		1.45	.03	.15	.04		T.	.62	.32					.14	.10	T.	.29			.07	.04	T.			T.				3.45
Kearney	Platte			.66		1.44	.14		.18				.70					.41		.08	1.58							.19				5.38
Kimball	South Platte		T.		.07	T.	.17			.02	.09	.35							.07	T.				.03								0.80
Kirkwood	Niobrara			.79	T.		1.25	T.		T.	T.	.15	.22					.03	T.	.42			T.				T.					2.86
Kowanda ‖	North Platte		.85		.14	.07	.18				.10	.14	.97							.36		.13										2.94
Lexington	Platte		.36		.57	.29		.06			.25	.35						1.02		.35	.08	1.46										4.79
Lincoln	do		.71	.24	.21		.02								T.		.11	2.31	.03		.63	.03					T.	.02	.01			4.32
Lodgepole	South Platte				.11		.08					.21		.19			.10	.36		T.	.09											1.14
Loup	Loup		.56		.08		.25		T.			.21	.18					.32	.18		.28						T.					2.06
Loyal	do		1.11		1.35	.15	.85	T.	T.	T.				T.				.30														3.76
McCook	Republican		.57		.57	.47	.22	.20				.31	.77						.43		.73						.07					4.34
Madison	Elkhorn			1.10				.20			T.	T.	.33						T.	.31		T.						.37				2.31
Marquette	Platte			1.47	.03		T.		T.									.41		.84		1.28						.12				4.15
Mary	Loup	.35			.15		1.44		.02	.04		.22		.02				.06	1.42	.08	.01		T.	T.	T.							3.81
Minden	Blue	.05	1.86		.90		.47		.01		T.	.03						1.07	.02	.07	1.46		T.				T.	.52				6.46
Mitchell ‖	North Platte	T.				.45	T.			.03	T.	.09	.04			T.		.03			.07			T.								0.71
Mullen	Loup		.76		.73	1.08	.42		.05			.01	.11					.62		.08	.01		T.	T.	.03		T.					3.90
Nebrasks City	Missouri		1.00		T.		T.											.18	T.			.55										1.73
Norfolk	Elkhorn			.88	T.		.04	.70			T.	.04	.30					.16	.02	.07	T.				T.		.32					2.53
North Loup	Loup			.45	.07		.32		T.			.10	.40					.70	.55	.34		.02										2.95
North Platte	Platte	.02	.11		.68		.84				.01	.34		.01			.13	.05														2.19
Oakdale	Elkhorn		.76		.01		.47		.01	T.	T.	.11	1.05				T.	T.	.20	.50	T.		T.	T.	T.		.31	.02				3.44
Omaha	Missouri			.38			.21		T.			.01	T.				.01	T.	.03	T.	.01	.05					T.	.01			T.		0.71
Ord	Loup			.56	.07	.04	.32	.16	.09			.08	.52					.15	.25	.99								.02					3.25
Palisade	Republican	.74	.05		.57	.64				.05	.70	.40						.25				.15										3.55
Pawnee City	G't Nemaha			1.55			.95	.67											.45	.10		1.95					.05					5.72
Paxton	South Platte	T.	T.		.40	.02	3.13			T.	.03	.25	.10	T.		.09			.51		.11			.04	T.							4.68
Plymouth ‖	Blue			.72		.17	.37	.03										.20		.29		2.00						.06				3.84
Purdum	Loup		.19		.09		1.55		.01	.01	T.	.16	T.	.06				.32	.25	.02	T.		T.		T.							2.66
Ravenna	do		.70		.52							.61						.80		.12	.96						.55					4.26
Red Cloud	Republican	.02	.17	3.90	T.	.54	.70		.04									.29			.05		.25	.02				.68				6.66
St. Libory	Loup		.71		.08		.05		.03	.01			.21				24	1.11			.42						.23					3.09
St. Paul	do		.50		.05		.04				.08		.12					1.06	.59	.05	.13						.13					2.75
Santee	Missouri		.15	1.25	T.			T.		.80		.27						.30			.01					.01		.01			.01		2.81
Sargent ‖	Loup			.75	.75			1.10	T.			.20	.60					1.25														4.65
Schuyler	Platte		2.50				T.		.01		T.	T.	.17					.02	T.	.28	T.	.02		T.				.37					3.37
Scottsbluff	North Platte		.05		T.	.35	.02			T.	T.	.11					.01	.49			.01		T.	T.								1.04
Seward ‖	Blue		1.25	T.	.08		.05											.90		.15	.90						.50	.15				3.98
Sidney	So. Platte		.12		.02	.16						1.11	.25				20			.05	.42											2.33
Springview	Niobrara		.93			1.20				T.	T.	T.						.01	.10	.10	.55			T.	.15			.18				3.22
Stanton	Elkhorn			1.87				.20					.30												.45			.49				3.31
Stratton ‖	Republican		.30				.20				.55	.85						.26	.06	.33												2.55
Superior ‖	do			.80		.15		.60										.55	.55					.90								3.55
Syracuse	L'le Nemaha			1.20		.06	T.	.19										.10	.70	.26	T.		.90									3.41
Tecumseh	G't Nemaha			1.45															.75	.12												2.32
Tekamah	Missouri	T.		1.60				.65					1.40								.20							1.00	.15		T.		5.00
Tobias	Blue																															
Valentine	Niobrara		.54		.01	.10	.87				.02	.40				.01	T.	.56	.16	.47	T.		.11	.15	.13			.04				3.57
Wahoo	Platte		.72									.10						.31		.28												1.41
Wakefield	Elkhorn			1.40			.41					.06	.50					.05		.18						.03	.22	.09			.01		2.95
Walthill	Missouri			2.00				.62			.09		.78						.03		.55							.45					4.52
Watertown	Platte		.73		.92	.01			.06			.40						.86				1.02					.10					4.10
Wauneta	Republican	.25			.22			.05			.60	.40					.10	1.05	.30			.10										3.07
Weeping Water	Missouri	.28		.96		.02	.04	.01										.24	.18	T.			.22					T.				1.95
Westpoint	Elkhorn							.64					.52							1.28	T.							.76				3.20
Wisner	do				1.69			.82			.45								.04	.51	.05							.36				3.92
York	Blue			2.85		.15	T.												.62	.01	.35		1.35					.08				5.41
Iowa.																															
Afton	Missouri	.15		.50				.38										.17	.94			T.	T.					.19				2.33
Allerton	Chariton			.10		T.	T.	1.82										.05	.03	.10												2.10
Alton	Floyd			.56			.18	.97		.11	.03	.30	.75	.02	.37		.05		.20								.35			.22		4.11
Atlantic	Nishnabotna			.71		.01	.14	1.60	.01			T.	.32						1.03									.13					3.95
Audubon	do	.03		.22				.62					.09						.47									.40					1.83
Bedford	Missouri	.03		1.08			T.		.06									T.	.24			.45										1.86
Centerville	Chariton	T.		.22				1.15					T.					T.		T.												1.37
Chariton	do	.20		.12														.12	T.							T.						0.44
Clarinda ‖	Nodaway	.38		1.31			T.											.03		.06		.48	.25									2.51
Corning	do	T.		1.18			T.		T.			T.						.40	.76			.10	T.				.05					2.49
Corydon	Chariton			.10				1.05										.07	T.	.10												1.32
Council Bluffs	Missouri			.67				.23	T.				.11					T.	.33			.07						.06	T.		T.		1.47
Creston ‖	do	.07		.48	.18			.30										.12	.01	.32								.06					1.54
Cumberland	Nodaway			.75				.70					.20					.87	1.41									T.					3.93
Denison	Missouri			.37			.21			1.27		.25	1.15		T.											T.		.51			T.		3.82
Elliott	Nishnabotna			1.00				.39	T.			T.						.23	.24			.19					T.					2.05
Greenfield	Nodaway	.05		.43				2.25				.03	.30				1.38	T.	.44			T.	T.				.05					4.93
Harlan	Nishnabotna			.40	T.		T.	1.03	.07		T.		.27						.31			.08					.38			T.		2.54
Inwood	Big Sioux		.01	.91			.38	.66		.22	.10	.21	.01	.01	.48		.09		.43		T.			T.	T.		.22					3.73
Lamoni	Missouri		.52			T.	.70	.80										T.	T.	.83		.17										3.02
Larrabee	Little Sioux			.30			.20	1.20		.15		.10	.30					.67									.25				.23		3.39
LeMars	Floyd			.63			.06	.87		.08	.01	.09	.56	T.	.21							T.		T.	T.			.70			.25		3.46
Lenox	Missouri			1.15				.25										.10	.41			.10										2.01
Leon	do			.22			.93											.15		.17												1.47

TABLE 2.—*Daily precipitation for August, 1911. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Iowa—Continued.																																	
Little Sioux	Little Sioux			.70				.83				.05	1.55						.16			.10		T.				.91					4.20
Logan	Missouri			.68				.65	T	T.	T.							T.	.65									.34					2.42
Mount Ayr	do	T.		.95				1.30										.06	.60			.14											3.05
Murray	do	.19		.21		T.		.78	T.			T.	T.				1.07		.38	T.		T.						.03					2.66
Odebolt	do			.04				.70			.03	.37	.55						.05			T.						.50			.07		2.31
Onawa	do			.94				.63			.08	.02	.55		.01			.02	.15									.73					3.13
Pacific Junction	do			.65		T.		.03	T.				T.				.03	.76	.40		.16							.08					2.11
Rock Rapids	Big Sioux		1.08				1.07			.79	.29	.27			.45		.02	.11													.09		4.17
Sheldon	Floyd		T.	1.15		T.	.65	.35		.45	.30	.35	.15	.35	.75		.03		.12		T.											.35	5.00
Sibley ‖	Big Sioux	.03		.23	.40	.01	.32	.91		.22	.84	.03	.17		1.46			.03								.01		.04			.15		4.85
Sioux Center	Floyd		T.	.78			.71			.35		.30	.18	.08	.23		T.		.11					T.			.52				.02		3.28
Sioux City	Missouri			.96			.21				T.	.02	.82		T.		.03								.05	.03	.72	T.			.02		2.86
Spencer	Little Sioux			.16		.15	.44		.47	.07		.27	.07	.11	T.		.01							T.			T.						1.75
Thurman	Missouri	.09		.97		T.	T.	.02					T.				T.	.02	.47	T.		.62						T.					2.19
Washta	Little Sioux			.47			.90				T.	.05	.65				T.					T.					.55	T.			T.		2.62
Woodburn	Chariton	.03		.18		.02		2.20				T.	.35					.14	.06	.06		T.				T.							3.04
Kansas.																																	
Abilene ‖	Smoky Hill			1.46				.72												.54	.36	.58						.54					4.20
Agricultural College	Kansas	T.		2.13				.02										T.		.33	.55	2.10		T.				T.	.40				5.53
Alton	Solomon		T.	2.00	T.	.61	.01	.03							.07			.05		.07	.22	T.	T.	T.				.50					3.56
Atchison	Missouri			2.00				.05										T.		.07		1.40		T.									3.52
Beloit ‖	Solomon	T.	.02	.84		.11		.04										T.		1.53		.77						.07	.87				4.25
Blakeman	Republican		.19									.76	.41				.03	.11		.83		.03	.01										2.37
Blue Rapids ‖	Blue																																
Centralia	do	T.		1.22				.06										.50	.42	1.00		1.85							.05				5.10
Chapman	Smoky Hill			1.45				.76	T.											.97	.64			T.				.40	.60				4.82
Clay Center	Republican			.78		.32														.65	.87	1.28							.78				4.68
Colby	do		.40		.16						T.			T.			.38		.25		12		T.										1.31
Concordia	do	T.	1.63		.05	.03			T.									1.17	1.45	.07	.84	.02					.04	.48					5.78
Densmore	Solomon		.42	.55	.10	.85							.01	T.				.09		.53	.31	.05					.22	.30					3.43
Dresden ‖	Republican		.08	.18		.14	T.	.04				T.		T.	.15		T.	.06		.34		T.						.83					1.82
Ellsworth	Smoky Hill			1.33				T.										T.		T.		.03		.10				.46					1.92
Enterprise	do			1.25				.72												.63		.59		T.				.24	.60				4.03
Eskridge	Kansas			1.15	.07			.23												.17		2.42		.07					.27				4.38
Farnsworth	Smoky Hill	.44	1.02			.29	.01								.36			.01		.12			.04	.10									2.39
Fort Scott ‖	Marmaton	.68	T.	.39	.62		.04															2.17	1.80		T.			T.					5.70
Frankfort	Blue	T.		1.25				.03										T.		.40		2.10							.10				3.88
Garnett	Osage			1.40		T.																2.04		T.	.05			T.	.05				3.54
Goodland	Smoky Hill	.25	.66		.52						.05	.24				.15		.15		.51					T.								2.53
Gove	Blue	.83	.30		.20		.02								.02			.07		.33					.08								1.85
Hanover	do			1.70		.02	T.											.09		1.09		2.23							.41				5.54
Harrison	Republican	T.	.06	1.11	.43	.20	1.40		.03									.60	T.	.19		.30	T.					.17					4.49
Hays	Smoky Hill	.46		.76		1.43														.05	.28	.13			.06			.92	.38				4.47
Hill City	Solomon				.15									T.			.20		.16		T.		.01			3.75	.03						4.30
Horton	Kansas			2.22				.05										T.		.25		1.54		T.									4.06
Hoxie	Solomon	T.	.20			.40									.17			.14		.20							2.20						3.31
Jewell	Republican																																
Lawrence	Kansas		1.15	T.				.30				.07								.23	.86	.30		.03			T.						2.94
Leavenworth	Missouri			2.15				T.										.28		.06	.75			T.									3.24
Lebanon	Solomon		T.	2.78		.66	.75											.07	T.	.09								.25					4.60
Leoti	White Woman.														.14			.18		.06	T.		.11	.05			.11						
Lindsborg	Smoky Hill																																
Mankato	Republican	T.	T.	.90	.06	.12	.04											.86		.42		.40	T.	.04				.26					3.10
Minneapolis	Solomon		1.75					.35										.04		2.27		.42							.64				5.47
Moran	Marmaton	.01		.89	3.04	.16												T.				.55	.12	T.				T.					4.77
Natoma ‖	Saline		.15																														
Norton	Republican		.75	T.		.67	.04							.05			T.	.11	T.	1.29	.21	.03					.21	.06					3.42
Oberlin	do		.05	.50								.09	.07	.68				.06	T.	.58	.05						.05						2.13
Oketo	Blue			1.68	T.		.40	.03									.01	.12	.92	.83		1.90						.13					6.02
Olathe	Kansas			1.39	.23			.14												.04		.84	.52	.03	.02			T.					3.21
Osage City ‖	Osage	T.		.91	.05															.10	T.	1.95	.05		.05				.47				3.58
Ottawa	do			1.05	.11															.07		2.55		.02	.04				.08				3.92
Phillipsburg	Solomon	T.	3.86			1.33	.12					T.						.72		.10		.15	T.					.86					7.14
Plainville	Smoky Hill	.40		1.05		1.40	.65														T.					T.	.25	T.					3.75
Pleasanton	Osage			.80	.17																	2.25	.48		T.								3.70
Republic	Republican		T.	.87		.14			.01											.72		.55						.15					2.44
Russell	Smoky Hill	.16		1.30		1.10														.17		.39		T.				1.56	.45				5.13
Russell Springs	do		T.		.35	.30					.02		.05				.25			T.	T.		.15										1.12
St. Francis	Republican	.60	.38		.02						1.13	.02	.30				.32	.26		.42		T.	.03										3.48
Salina	Smoky Hill		T.	1.85		T.		.15												.52		.40		.02				T.	.35				3.29
Scott	White Woman.		.10	.03		.92	.02											T.		.07	.04		T.	.17			.04						1.39
Smith Center	Solomon		6.44		.44												.25			.18	.44							.25					8.00
Topeka	Kansas		.20	1.19				.14				.10							T.	.28	.64	1.74		.01	.01			.13					4.44
Valley Falls	do			3.00				.02					.04							.22		1.05											4.33
Vinland	do			.82	T.			.22				T.								.16		1.25			.09				.04				2.58
Wakeeney	Smoky Hill	.14		.36		.68												.06		.20	.14			T.				.71					2.29
Wallace	do		.22			.32	.01											.22					.13										0.90
Wamego	Kansas			2.50														T.		.45		2.70		T.				.55					6.20
Missouri.																																	
Amoret	Osage			1.05	.10																	1.60	.22	T.	.08			T.					3.05
Appleton City	do			.45	.15													.10				1.25	.86	.05									2.86
Arlington ‖	Gasconade																																
Arthur	Osage			.48	.31							T.						T.				2.03	.30										3.12
Avalon	Grand			.40				.35				.20										.77						2.25					3.97
Bagnell ‖	Osage																																
Bethany	Grand			.95															.16			1.16											2.27
Bolivar	Osage			.23	1.33	.01																.70	.85	1.30	.41								4.83
Boonville ‖	Missouri				.08			T.												.46			1.26		.20				.12				2.12
Brunswick ‖	Grand	.40		.05	.11															.38		.11	.68		.05				.52				2.30
Columbia	Missouri	T.			.05			T.												.18		1.10		.45	.08			T.					1.86
Conception	do	T.		1.23			T.	.24											T.	T.		1.60											3.07
Crocker	Gasconade				.21			.02										.29				.17	.02	1.33	.58								2.62
Eldorado Springs	Osage			.93	.70										T.			T.				1.30	.40	.55									3.88
Fayette	Missouri			T.	.08			T.												.41		.90		.15	.13				.27				1.94

TABLE 2.—*Daily precipitation for August, 1911. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Missouri—Contd.																																	
Fulton	Missouri	.12						T.												.34		.88		1.62	.60								3.56
Glasgow ‖	do	.36																		.01		T.	.98		.32				.04				1.71
Grant City	Grand	T.		1.45			T.	.38											.22			.87							T.				2.92
Harrisonville ‖	Osage	1.52		1.93	.66			.03													T.	.45	2.65		.06				.03				7.33
Hazelhurst	Grand			.36			.16	.04										T.	T.			.60		T.				.25					1.41
Hermann ‖	Missouri	1.12				T.	T.	.22	.10		T.				T.	T.				.01	1.04	.14		.62	.01	2.52	.02			T.				5.80
Houston	Gasconade				.67		.05								2.00	.27		T.		T.		.26	.41	.14	2.20			T.						6.00
Jefferson City ‖	Missouri	.55			.15														.16	.01			.25	.10	3.05	.02							4.29
Kansas City	do			1.50				.01														.74			.06								2.31
Kidder ‖	Grand	.01		1.10	.20			.22												.16		.50	.26										2.45
Lamonte	Missouri	.01		.70	.20			T.														.33		T.					1.28				2.52
Lebanon	Osage				.86										T.							.85	1.05	1.58	.16	.03							4.53
Lexington ‖	Missouri	.49		.80	.34			T.												.03		.30	.34		.02				.14				2.46
Liberty	do				1.33			T.														.94		T.	.03								2.30
Lockwood	Osage	.04		.49	2.53	T.																2.00	4.05	.16									9.27
Marshall	Missouri			.16	.14		T.													.26		.62	.06	.03					.82				2.09
Maryville ‖	do	.19		1.59				.12														.94	.02										2.86
Mount Vernon	Osage			.42	2.50	.15	.03															2.75	4.00	.70	1.46				.03				12.04
Nevada	do			.23	.52	T.													T.			1.59	.70	T.									3.04
Oregon	Missouri			1.43			1.10	.09										T.		T.		.94	.02										3.58
Osceola ‖	Osage																																
Pattonsburg ‖	Grand				1.26			.25														.65											2.16
Rolla	Gasconade				.09	T.	.05								.02					.36		.13	T.	.39	1.05								2.09
St Charles	Missouri	.51		T.				.25	.20						.10					.21		.02		.17	1.93				.54				3.93
St. Joseph	do			2.24				.08										T.		.04	.81	1.26		T.									4.43
St. Louis (1)	Mississippi	.39		.28	.02			1.47	.01					T.						.03		.02		.38	.63			.03	.25				3.51
St. Louis (2)	do	.40		.45	.07			.48	1.26					T.						.06		.02		.05	1.34				.60				4.73
Subiett	Chariton			.35				1.87										T.				T.											2.22
Trenton	Grand		.33	.13			.25											T.	.10	T.	.15	.66		T.				.23					1.85
Unionville ‖	Chariton				.40			2.00										T.		.50			T.										2.90
Warrensburg	Missouri			.87	.20			T.												T.		.56		.05					.42				2.10
Warrenton ‖	do	.70						.87	.03										.27	1.16	.06		.48	.35	1.96	.01		T.					5.89
Warsaw	Osage			.62	.49										T.			.62				.51	.97	.32	.04								3.57
Wheatland	do	1.95	.10	.60																		.60	.10	.20									3.55

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations, for August, 1911. District No. 6, Missouri Valley.*

Date.	Wyoming.																Montana.											
	Basin.		Cheyenne.		Fort Laramie.		Lander.		Newcastle.		Pathfinder.		Sheridan.		Yellowstone Park.		Billings.		Dillon.		Havre.		Helena.		Lewistown.		Malta.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	86	46	78	45	88	45	85	44	84	43	87	.....	82	42	69	39	75	49	66	34	71	56	67	51	69	44	77	57
2....	84	44	81	47	80	60	72	49	75	44	86	.....	60	46	58	42	65	55	67	33	67	56	65	49	58	49	65	55
3....	77	47	72	44	79	50	72	41	80	48	81	.....	70	50	65	37	75	45	69	32	75	53	69	49	70	43	76	55
4....	76	48	79	45	85	47	76	45	76	44	83	.....	75	51	66	43	74	54	79	37	72	56	63	51	71	40	73	46
5....	79	47	80	48	88	57	78	47	74	49	86	.....	73	52	61	41	76	50	82	40	70	54	67	52	62	50	72	46
6....	86	48	80	54	80	58	77	53	68	54	77	.....	69	51	64	44	74	50	86	42	72	54	70	47	71	47	72	47
7....	90	48	86	48	94	48	88	45	78	46	88	.....	89	48	74	44	83	50	85	42	75	53	76	49	77	43	80	51
8....	86	49	90	56	95	59	89	49	85	54	92	.....	76	56	75	41	71	49	80	40	64	50	66	48	60	44	75	49
9....	87	48	82	55	80	63	88	50	84	56	89	.....	76	54	70	47	64	56	84	45	59	44	65	48	62	41	65	40
10....	89	49	69	54	76	60	74	52	72	58	88	.....	63	54	65	41	74	50	84	44	72	50	72	46	65	48	70	52
11....	90	51	74	54	86	58	84	52	78	58	85	.....	89	48	79	40	75	44	82	48	81	50	81	46	80	41	84	50
12....	92	50	83	57	95	55	88	47	84	58	82	.....	90	48	80	48	91	50	85	46	88	53	87	54	82	49	91	57
13....	94	54	84	58	95	59	89	51	95	62	89	.....	92	48	78	48	95	46	85	38	87	54	86	53	82	46	92	55
14....	94	49	89	57	100	50	88	50	96	58	89	.....	91	48	80	41	92	47	84	36	88	50	89	51	81	45	87	58
15....	92	51	89	62	103	55	89	54	99	60	89	.....	87	52	78	49	85	50	89	36	79	53	83	54	78	49	82	54
16....	90	51	75	55	79	59	81	50	90	64	86	.....	85	56	78	39	86	56	86	38	80	51	81	51	77	52	76	53
17....	91	56	84	52	94	54	89	50	92	60	90	.....	86	51	82	43	90	48	87	38	87	51	87	52	87	48	85	50
18....	95	55	89	56	94	63	93	50	84	60	93	.....	90	57	84	46	92	58	90	39	87	52	87	58	73	52	86	57
19....	96	56	86	52	90	56	92	51	85	58	94	.....	92	57	83	47	89	49	89	36	90	52	90	56	81	45	92	53
20....	93	56	86	61	99	63	90	53	95	62	88	.....	88	51	73	45	87	49	87	38	75	52	71	57	78	47	80	52
21....	85	53	71	56	76	52	70	42	82	56	85	.....	66	49	62	37	69	48	82	40	64	48	60	46	72	41	65	48
22....	69	42	62	44	66	48	64	41	62	41	71	.....	61	43	61	35	65	43	75	32	67	47	60	45	61	39	66	39
23....	72	41	68	48	76	47	75	40	65	42	80	.....	64	38	58	35	62	49	71	34	70	38	63	44	61	46	71	33
24....	70	41	62	45	70	52	67	42	62	46	76	.....	69	43	67	33	76	35	75	32	80	40	75	38	74	32	79	35
25....	80	38	77	42	85	34	79	35	76	42	80	.....	78	36	69	34	73	41	76	32	72	48	69	42	72	39	73	47
26....	67	42	77	48	80	42	71	41	74	42	78	.....	61	47	61	38	70	50	79	33	60	41	62	42	58	44	61	45
27....	76	40	65	46	69	50	67	38	60	40	69	.....	59	40	67	33	62	43	82	34	63	31	67	39	59	32	62	33
28....	80	38	78	41	85	47	81	36	64	36	82	.....	79	31	76	34	80	33	85	41	78	34	81	40	71	35	75	41
29....	82	44	82	51	92	39	84	49	84	45	84	.....	82	41	77	43	86	46	84	43	84	52	77	55	77	45	84	46
30....	86	46	84	53	93	42	88	46	74	42	88	.....	86	46	81	46	90	48	87	46	85	54	84	61	80	48	87	54
31....	92	47	87	57	101	43	90	49	94	52	89	.....	94	46	80	46	94	47	86	40	90	56	86	54	87	46	92	47
Mns..	84.7	47.6	79.0	51.1	86.2	52.3	81.2	46.5	79.7	51.0	84.6	.....	78.1	47.8	71.6	41.3	78.7	48.0	81.5	38.4	75.9	49.5	74.4	49.3	72.1	44.2	77.3	48.5

Date.	Montana.				North Dakota.										South Dakota.											
	Miles City.		Poplar.		Berthold Agency.		Bismarck.		Dickinson.§§		Jamestown.		Williston.		Aberdeen.§§		Daviston.		Huron.		Kadoka.		Kimball.		Pierre.		Rapid City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	78	51	81	54	82	41	79	47	80	43	74	52	79	51	74	47	78	38	78	53	82	.....	83	55	79	51	77	48
2....	74	58	74	56	73	52	70	55	71	50	75	47	74	56	68	52	76	51	73	51	78	.....	79	48	76	57	68	55
3....	75	57	71	56	63	55	64	55	62	53	61	55	63	55	72	55	66	54	73	58	82	.....	72	57	74	60	70	51
4....	76	50	79	48	73	53	73	54	75	49	67	55	73	48	72	58	76	46	78	55	81	.....	78	52	80	57	74	50
5....	78	59	65	53	77	44	76	48	76	42	73	45	73	45	71	50	75	49	80	56	80	56	79	56	76	57	74	55
6....	78	57	79	50	70	55	76	57	70	49	74	58	71	54	72	51	70	50	75	60	77	54	78	58	79	59	71	54
7....	90	57	83	54	77	53	78	60	77	53	75	50	76	53	78	64	82	50	79	59	83	52	80	59	80	60	84	53
8....	75	58	74	54	74	56	78	55	75	55	74	59	68	55	84	60	80	55	90	60	88	66	90	60	87	67	83	62
9....	63	56	69	44	60	50	60	53	57	48	67	51	61	46	70	55	72	51	75	61	74	58	79	61	72	60	72	57
10....	69	53	70	50	67	57	67	53	62	50	64	53	67	53	70	55	70	40	75	59	76	57	80	60	75	61	60	54
11....	90	60	85	54	77	52	76	54	76	51	70	45	77	51	74	54	77	55	68	55	75	57	68	55	73	61	74	56
12....	95	62	94	58	86	56	84	60	90	55	88	57	89	56	72	55	90	56	82	60	93	59	81	60	85	62	94	57
13....	98	62	96	71	93	62	90	63	89	57	86	61	96	56	94	65	90	57	90	68	98	60	88	67	96	71	92	66
14....	92	62	91	56	90	59	91	60	90	59	84	59	88	61	92	65	92	63	93	65	95	62	93	65	96	66	95	62
15....	87	63	90	58	82	57	80	60	85	60	82	55	81	60	99	65	90	57	102	68	104	64	98	65	104	73	97	61
16....	85	59	80	54	75	55	76	58	78	56	70	59	75	56	82	66	82	62	84	63	85	65	86	65	82	66	83	64
17....	87	57	89	54	80	50	81	53	85	50	67	50	79	53	81	54	86	57	89	58	93	60	89	58	92	64	87	64
18....	92	66	91	54	89	43	83	51	84	48	74	52	89	55	81	52	83	56	85	60	81	58	82	60	82	62	85	58
19....	92	53	93	52	89	52	86	55	88	50	78	54	86	55	87	52	87	53	85	60	84	60	88	60	87	64	82	59
20....	90	60	90	61	92	60	90	64	95	59	80	58	90	62	87	57	96	68	85	58	94	69	87	60	93	68	96	65
21....	64	54	77	51	77	50	71	51	64	52	80	57	64	43	82	62	85	53	79	57	79	57	80	66	84	58	72	50
22....	66	42	72	33	68	30	68	40	67	33	59	39	65	32	64	45	78	43	64	52	68	43	69	51	61	52	53	48
23....	64	46	72	34	74	29	70	35	70	31	64	36	70	37	70	45	70	48	65	51	58	48	61	50	60	51	58	48
24....	74	44	77	38	76	39	75	48	76	42	64	54	76	40	76	50	72	49	59	51	67	51	60	49	68	52	65	52
25....	81	48	76	44	79	38	84	49	85	45	64	48	73	49	78	44	84	44	80	42	.....	.....	78	48	81	53	75	43
26....	66	52	63	48	57	43	56	44	61	46	63	45	58	46	70	45	68	27	79	46	80	47	80	52	71	48	68	53
27....	60	41	66	42	57	42	56	40	56	38	50	38	56	39	65	40	70	36	65	40	63	44	64	41	65	44	59	39
28....	78	38	73	31	67	30	66	32	69	26	55	37	65	35	63	35	80	57	68	36	64	38	53	35	61	39	65	36
29....	84	52	83	51	70	44	72	45	76	33	59	38	69	50	72	40	77	38	78	53	84	46	80	48	83	52	78	43
30....	85	54	86	56	83	50	84	47	87	44	75	52	82	56	87	52	85	49	91	59	88	60	89	56	90	64	85	58
31....	96	54	93	49	87	47	88	52	91	51	83	57	85	50	90	50	93	52	94	53	94	55	92	55	98	58	91	56
Mns..	80.1	54.4	79.9	50.6	76.3	48.3	75.7	51.5	76.4	47.7	70.8	50.6	74.8	50.3	77.1	52.9	80.0	50.5	79.5	55.7	81.6	55.6	79.5	55.9	80.3	58.6	77.0	54.1

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 6*—Continued.

Date.	South Dakota.						Colorado.				Nebraska.															
	Sioux Falls.§§		Watertown.§§		Yankton.		Denver.		Wray.		Alma.		Bridgeport.		Grand Island.§§		Hay Springs.		Hebron.		Lincoln.		North Platte.		Oakdale.		Omaha.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	76	53	75	53	77	53	87	52	85	53	83	59	85	49	80	57	83	40	78	60	83	58	77	56	79	50	79	61
2	86	51	70	48	83	54	87	57	89	59	84	64	85	45	86	60	81	58	90	60	90	60	85	56	87	51	87	62
3	78	55	74	55	79	60	82	48	85	50	83	57	83	45	84	58	75	68	80	62	84	64	78	53	79	57	84	65
4	80	55	75	54	81	56	85	52	90	49	83	60	88	42	81	56	80	46	87	61	89	62	81	48	79	52	89	66
5	84	56	80	49	84	60	89	53	86	56	83	59	82	58	84	57	75	42	86	63	88	63	77	54	85	56	89	68
6	86	59	73	51	83	61	92	54	96	60	79	62	77	54	81	54	72	52	78	63	81	66	79	56	83	64	83	70
7	79	58	78	59	81	60	94	55	92	51	85	63	90	46	87	59	85	47	83	64	88	66	85	51	81	55	84	68
8	88	58	87	56	90	63	97	62	102	61	92	65	98	57	92	65	85	58	93	62	94	64	89	66	90	59	90	68
9	87	59	70	56	82	64	87	61	96	62	97	68	82	66	93	68	82	59	99	67	99	70	82	66	84	67	92	74
10	78	60	70	57	76	62	80	58	94	60	89	65	73	56	87	63	72	58	96	68	101	72	83	61	78	63	100	72
11	78	55	71	54	63	57	73	57	82	59	75	67	80	62	69	63	70	58	83	68	85	66	80	63	68	59	82	65
12	94	55	79	54	86	61	83	59	92	58	94	62	90	55	93	61	90	56	96	66	98	68	88	59	86	62	96	68
13	89	61	89	59	91	73	88	59	94	64	95	65	93	53	93	69	94	61	95	70	97	72	93	68	91	70	96	77
14	94	62	93	63	92	71	92	61	98	60	96	68	99	51	97	71	98	54	96	66	99	69	97	60	93	68	97	74
15	94	63	94	62	99	68	91	62	98	68	98	64	94	56	100	69	99	58	99	66	103	69	96	62	95	65	100	75
16	93	67	82	64	87	66	85	63	94	67	98	70	89	55	98	70	78	58	97	71	102	76	92	65	90	68	100	76
17	90	58	81	55	86	59	88	58	89	67	90	66	91	60	90	66	98	54	88	67	88	68	88	62	89	63	90	72
18	85	58	84	55	82	63	90	62	98	64	92	63	.....	.....	88	66	85	59	93	68	90	68	86	63	78	60	89	70
19	86	60	87	55	84	65	88	62	91	62	89	65	.....	.....	86	64	82	55	85	63	84	67	86	61	83	64	84	68
20	80	58	83	55	83	62	86	60	89	62	93	68	90	57	87	68	92	64	88	69	89	67	88	65	83	61	88	67
21	84	63	78	64	84	62	75	60	82	61	82	67	93	55	83	67	76	56	83	66	83	67	80	61	82	62	83	70
22	68	46	64	40	66	48	70	56	75	54	63	55	65	46	67	53	66	42	71	57	72	57	62	51	68	51	71	58
23	70	47	70	40	66	54	79	53	68	52	71	55	71	53	66	53	65	48	70	55	71	55	67	50	68	53	68	58
24	70	50	60	48	73	50	65	50	74	54	77	47	70	47	75	46	63	49	75	47	78	49	68	48	74	44	79	52
25	84	50	82	39	78	52	76	45	82	39	80	48	83	36	80	45	82	36	77	53	78	55	80	41	77	45	78	58
26	85	50	79	39	86	56	86	54	90	58	91	53	78	49	87	52	73	42	84	55	86	54	87	56	85	55	86	60
27	60	47	63	55	63	46	65	51	76	50	66	54	68	45	64	55	61	45	69	55	71	52	70	48	62	48	71	55
28	72	38	60	34	66	42	85	47	79	46	73	43	84	40	70	42	84	38	71	45	72	45	70	41	67	37	70	48
29	72	42	71	35	76	53	88	56	91	52	80	49	91	48	88	48	88	45	76	45	77	47	84	50	76	46	76	54
30	82	50	88	49	85	58	88	58	94	54	93	55	92	43	86	58	85	52	84	57	84	58	88	55	83	59	82	58
31	92	55	93	48	90	58	94	56	95	50	96	56	95	45	92	56	93	48	93	55	95	61	92	50	89	54	91	62
Means	82.1	54.8	77.5	51.8	80.7	58.6	84.4	56.2	88.6	56.8	85.5	60.1	84.8[b]	50.8[b]	84.3	59.3	81.0	51.8	85.3	61.1	87.1	62.4	82.5	56.3	81.0	57.0	85.6	65.1

Date.	Valentine, Nebr.		Iowa.						Kansas.										Missouri.							
			Clarinda.§§		Sibley.§§		Sioux City.		Colby.		Concordia.		Salina.		Topeka.		Wakeeney.		Columbia.		Kansas City.		St. Louis.		Unionville.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	81	44	76	59	75	53	77	57	86	54	83	64	80	67	86	67	85	60	85	64	85	70	86	71	84	64
2	85	57	87	51	84	50	85	54	92	58	90	62	89	65	90	64	92	64	87	59	87	66	84	68	86	53
3	74	55	85	57	76	54	80	61	83	56	84	64	85	63	83	64	86	59	82	66	82	63	86	68	83	60
4	76	52	90	63	81	55	82	61	92	58	87	65	88	66	86	66	88	61	82	64	85	68	82	69	91	64
5	83	57	90	64	83	58	85	62	84	56	86	64	83	67	84	69	81	59	86	61	83	69	85	70	95	65
6	78	53	87	62	74	60	87	63	92	63	88	64	88	64	90	65	85	64	90	64	89	68	89	71	92	62
7	85	55	91	66	79	59	81	63	93	58	88	67	90	68	92	67	89	65	98	68	94	77	88	66	93	62
8	91	68	88	58	87	57	87	62	103	64	100	66	98	67	96	72	100	65	95	73	94	74	90	74	92	60
9	79	63	102	62	83	60	87	68	105	66	105	67	104	70	104	76	105	68	105	74	104	80	96	74	98	66
10	81	59	106	73	72	60	82	66	98	65	106	73	106	75	104	77	102	66	104	74	102	80	93	73	100	68
11	69	54	90	68	60	55	66	60	92	64	92	70	100	69	100	73	94	67	102	74	103	78	95	79	95	70
12	92	64	98	67	83	55	87	63	101	59	99	67	102	69	97	72	100	61	98	72	96	78	94	78	96	64
13	95	69	98	78	84	60	92	74	102	62	96	71	99	67	93	72	100	63	92	69	91	75	86	73	93	66
14	95	65	99	64	88	63	94	71	101	63	98	68	99	68	94	71	100	67	88	70	91	74	84	74	94	68
15	100	64	104	67	91	64	95	70	102	64	103	72	104	69	99	74	101	65	96	67	98	75	90	72	98	66
16	83	64	105	70	85	65	89	69	105	68	101	76	102	70	98	73	100	70	98	68	95	76	94	73	97	67
17	89	58	91	70	83	58	87	64	98	65	88	67	94	73	92	74	95	66	97	72	88	76	92	77	90	66
18	76	62	96	65	83	61	83	63	100	65	96	66	99	66	96	69	99	65	94	64	94	69	89	71	94	60
19	95	60	86	64	83	58	84	64	102	62	85	66	92	66	89	68	101	66	82	67	89	72	78	66	85	63
20	96	68	90	61	85	54	84	64	103	63	92	68	97	68	92	68	106	68	86	63	89	69	83	64	86	56
21	77	54	85	64	81	59	84	65	95	60	86	69	96	71	80	68	92	68	74	64	77	68	82	67	78	60
22	56	49	77	57	65	47	68	52	80	55	71	61	81	62	74	65	76	59	83	67	76	67	78	69	82	65
23	56	49	73	55	71	48	69	53	70	51	68	54	70	59	69	61	69	53	68	56	70	60	75	59	75	64
24	63	49	80	48	72	50	73	51	74	54	76	50	78	54	74	57	75	60	70	54	72	57	66	56	80	65
25	81	44	84	50	77	50	77	55	83	43	79	55	80	54	79	61	84	48	80	54	81	63	73	60	86	56
26	76	50	90	51	86	49	86	56	95	48	87	60	92	61	85	61	93	59	79	58	81	63	76	62	84	60
27	58	40	77	52	63	48	65	49	80	53	73	56	80	56	83	59	84	54	84	66	89	66	83	67	88	61
28	70	36	75	46	67	39	67	43	77	39	70	50	72	53	74	56	73	45	77	57	74	58	75	62	80	52
29	84	51	80	45	75	40	74	53	85	45	77	48	88	44	77	52	84	47	76	50	74	55	72	54	77	45
30	89	55	83	50	74	50	82	57	98	55	86	58	90	50	81	54	100	47	77	50	80	57	76	52	80	46
31	92	51	97	54	88	53	90	58	98	54	90	62	91	49	93	61	96	60	89	52	92	63	84	59	94	50
Means	79.8	55.5	89.0	60.0	78.6	54.6	81.6	60.4	92.5	57.7	88.1	63.5	90.9	63.5	88.2	66.3	91.5	60.9	87.2	63.9	87.3	68.8	84.0	67.7	88.6	60.9

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 7, LOWER MISSISSIPPI VALLEY.

ISAAC M. CLINE, District Editor.

GENERAL SUMMARY.

Unseasonably warm weather prevailed throughout the district during the first and second decades, except that it was cool over the north-central and northeastern portions from the 1st to the 8th. From the 21st to the close of the month moderate temperatures prevailed generally, except that on the 30th and 31st maximum temperatures were much above the normal over the plains of the Colorado and New Mexico areas.

Periods of precipitation were not well defined. In the Colorado area from the 9th to 12th, 15th to 18th, and 20th to 25th, showers were general. Light scattered showers occurred on other dates also, the 6th being the only day when there was no precipitation within the area. In the New Mexico area there was one period of general showers, 21st to 28th. Scattered light showers occurred on other dates, but from the 6th to 8th and 30th and 31st there was no precipitation within the area. Over Oklahoma and the Kansas and Texas areas there were two periods of showers, from the 1st to the 5th and from the 22d to the 28th. From the 7th to the 20th the weather was generally clear, only a few light showers occurring. In Arkansas, and the Missouri and Tennessee areas, speaking generally, there were three periods of precipitation, 1st to 6th, 13th to 15th, and 19th to 28th. Scattered showers occurred on other dates, but no rain fell, in the Missouri area on the 10th and from the 29th to the 31st; in the Tennessee area on the 10th and 11th and 30th and 31st; and in Arkansas on the 8th and 9th and the 31st. In Louisiana and the Mississippi area, speaking generally, there were two periods of precipitation, 1st to 7th and 12th to 29th. During the first period the showers were generally light, but in the latter period the rains were heavy to excessive in many localities, especially in the southern portion of Louisiana. The precipitation over the district was entirely in the form of rain, except that a trace of snow was recorded at Garfield and 0.2 inch at Lake Moraine in the mountains of Colorado. Weather conditions were favorable during the month, except that in that portion of the district that lies in the Great Plains the excessively warm weather of the first and second decades was unfavorable for outdoor work and the excessive rains in the southern portion were damaging in some localities.

TEMPERATURE.

Mean temperatures for the month were above the normal by small amounts over the Texas and New Mexico areas, and in portions of other States in the district, but over most of the district except the two States mentioned there was a small deficiency. The greatest excess in mean temperature was over the New Mexico area and in the Texas Panhandle, and the greatest deficiency in east-central Oklahoma. The warmest weather occurred generally about the close of the second decade in the western and central portions of the district, and about the close of the first decade over the eastern portion. The maximum temperatures were above 100° in all parts of the district, except in the southern portion, where they ranged between 95° and 100°. In Oklahoma and the Kansas and Texas areas the highest temperatures were above 105° at many stations, and above 110° in a few localities. The highest temperature for the district, 114°, occurred at Hugoton, Kans., and a maximum temperature of 111° was recorded at Healdton, Okla. The lowest readings were generally below 50° in the Colorado and New Mexico areas, and below 40° in the more elevated localities. Over the remainder of the district monthly minimum temperatures ranged from 48° to 60°, except that in the southern portion they were generally between 60° and 70°. The lowest temperature recorded during the month was 28° at Elizabethtown, N. Mex., and 30° was recorded at Lake Moraine, Colo.

Monthly mean temperatures and departures from the normal for the various States and parts of States are reported as follows: Colorado area, 62.8°, −0.5°; New Mexico area, 71.5°, +0.4°; Texas area, 78.8°, +1.0°; Kansas area, 76.7°, −1.4°; Oklahoma, 79.6°, −1.2°; Missouri area, 75.2°, −1.5°; Tennessee area, 77.4°, −0.8°; Arkansas, 78.0°, −1.6°; Mississippi area, 79.5°, −0.7°; Louisiana, 81.5°, −0.1°.

PRECIPITATION BY DRAINAGE AREAS.

Arkansas River and tributaries.—Heavy precipitation occurred over portions of this drainage area, but the amounts were unevenly distributed. Over the headwaters of the Arkansas River in Colorado the average from 35 stations was 2.11 inches, about the normal amount. Heavy precipitation occurred in some localities over those portions of the Arkansas Valley proper that lie in Kansas and Oklahoma, the average from 44 stations being 4 inches, about 1 inch above the normal. The average from 19 stations in the Cimarron Valley was 3.99 inches, about 1.6 inches above the normal. Over the Canadian Valley the precipitation was uniformly distributed, the average from 69 stations being 2.79 inches, about 0.3 inch below the normal. Nearly the normal amount of precipitation occurred over the Verdigris Valley, the average from 10 stations being 3.34 inches. Excessive rains occurred over the headwaters of the Neosho River in Missouri, but there was less than the normal at some stations over the lower stretches of this valley, the average from 16 stations being 5.54 inches, about 2.1 inches above the normal. Below the Oklahoma-Arkansas line heavy precipitation occurred generally, the average from 15 stations being 7.05 inches, about 3.3 inches above the normal.

Red River and tributaries.—More than the normal amount of precipitation occurred generally throughout this drainage area. Over those portions of the valley that lie in New Mexico, Texas, and Oklahoma the average from 43 stations was 2.81 inches, about 1.5 inches

above the normal. Over the lower reaches of the Red River in Arkansas and Louisiana the precipitation was heavier, the average from 18 stations being 5.33 inches, about 3.2 inches above the normal.

Mississippi River south of St. Louis and small tributaries.—Heavy precipitation occurred over this drainage area, except at a few widely scattered stations. In the immediate Mississippi Valley the amounts from 41 stations averaged 5.95 inches, about 2.5 inches above the normal. Over the Valley of the Meramec there was an excess of about half an inch. The average from 22 stations in the Valley of the White was 9.44 inches, about 5.8 inches above the normal; more than 10 inches occurred at 7 stations. Over the Yazoo Valley the average from 29 stations was 7.32 inches, about 4 inches in excess of the normal. The average precipitation over the Valley of the Big Black was 4.35 inches, about the normal amount. The precipitation from 19 stations in the Ouachita Valley averaged 6.96 inches, about 3.3 inches above the normal.

Louisiana coastal plain.—The precipitation was unevenly distributed over this drainage area, the average from 33 stations being 9.11 inches, about 3.8 inches above the normal. More than 10 inches occurred at 8 stations, and 1 station, Donaldsonville, received 28.50 inches.

Monthly precipitation and departures from the normal for the various States and parts of States (in inches) are reported as follows: Colorado area, 2.18, +0.07; New Mexico area, 2.59, −0.13; Texas area, 2.64, +0.70; Kansas area, 3.43, +0.42; Oklahoma, 3.91, +1.30; Missouri area, 6.34, +2.81; Tennessee, 5.92, +2.96; Arkansas, 8.19, +4.37; Mississippi area, 6.65, +2.27; Louisiana, 8.01, +3.63.

RIVERS.

No floods occurred in the Arkansas River during the month, but there were freshets in some of the smaller tributaries as a result of heavy local rains. In Oklahoma the Arkansas River was near the flood stage in the first decade, but the water fell rapidly and the stages were about normal during the latter part of the month. The lower Arkansas was navigable during the greater part of the month.

Two floods occurred in the upper White River, one on the 15th and 16th and the other on the 23d and 24th. At Calico Rock there was a rise of 21.8 feet in 24 hours, ending at 7 a. m. on the 15th, to a stage of 25.6 feet, being 7.6 feet above the flood stage, and a corresponding rise occurred in Batesville on the 15th and 16th with a maximum stage of 28.4 feet, 10.4 feet above the flood stage. The second flood was not so severe. The damage caused by the floods in the upper White River on the 15th appears to have been confined to farms in the bottoms between Calico Rock and Batesville. Losses of cotton, corn, and hay were incurred in the overflowed section to the amount of several thousand dollars.

Changes in the Red River were slight and low stages prevailed throughout the month, except that there were slight rises in the stretches of this river that lie in Texas and Oklahoma.

No material change occurred in the Ouachita River except that there was a slight rise at the close of the month.

Below St. Louis the Mississippi River was at a comparatively low stage throughout the month.

NOTES.

Missouri (George Reeder, section director).—Weather conditions were generally favorable for all interests, except that there was some damage from excessive rains during the first part of the month.

Arkansas (H. F. Alciatore, section director).—Excessive rains occurred, being damaging in many localities. This was the wettest August in Arkansas during the last 21 years.

TABLE 1.—*Climatological data for August, 1911. District No. 7, lower Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Colorado.																				
Blaine	Baca	3,935	19	75.0	− 0.8	105	20	47	28†	38	3.71	+ 1.92	1.60	0	4	15	11	5	s.	M. M. Myers.
Buena Vista	Chaffee	7,955	11	57.2	− 1.0	80	8	35	26	41	1.53	+ 0.41	0.62	0	9	25	5	1	ne.	C. A. Short.
Calhan	El Paso	6,700	4																	H. B. Rice.
Canon City	Fremont	5,343	23	71.6	− 0.9	98	8†	49	25†	40	1.80	+ 0.02	0.82	0	6	24	5	2	n.	G. C. Sherwood.
Colorado Springs	El Paso	6,098	31	65.5	− 1.4	91	8	42	25	37	1.09	− 1.05	0.56	0	9	9	16	6	se.	Colorado College.
Cripple Creek	Teller	9,396	10								2.19	− 0.62	0.84	0	7					F. G. Willis.
Cuchara Camps	Huerfano	8,200	2								0.88		0.38	0	5	18	11	2	sw.	George A. Mayes.
Eads	Kiowa	4,209	4																	W. H. Lauck.
Fairview	Custer	9,500	2								4.66		2.20	0	8	5	24	2	e.	Elizabeth L. Gray.
Fremont Exp. Station	El Paso	8,850	1	57.0		80	8	34	28	34	2.03		0.94	0	15	13	8	10	w.	U. S. Forest Service.
Garfield	Chaffee	9,510	1								3.00		1.37	T.	15	24	5	2	w.	Lloyd N. Felton.
Hamps	Elbert	5,400	18	66.0		94	8	42	29	44	4.22	+ 2.14	1.72	0	7	19	8	4	s.	W. Hamp.
Hermit Lake	Custer	10,000	1																	John E. Graham.
Hoehne (near)	Las Animas	5,700	19	71.4	+ 1.8	100	8	46	24	45	1.11	− 0.72	0.33	0	6	22	5	4	sw.	S. W. DeBusk.
Holly	Prowers	3,380	16	75.5	− 1.0	103	9†	51	31	44	3.14	+ 1.58	0.86	0	8	21	6	4	se.	Holly Sugar Co.
La Junta	Otero	4,052									1.45		0.50	0	5					Fred B. Mason.
Lake Moraine	El Paso	10,265	17	53.2	− 0.1	75	20	30	28	32	2.84	− 0.68	0.58	0.2	12	6	15	10	sw.	Clyde C. McReynolds.
Lamar	Prowers	3,592	21	77.0	0.0	107	20	50	4†	46	2.41	+ 0.51	1.02	0	5	15	9	7	se.	J. T. Lawless.
Las Animas	Bent	3,899	43	76.4	+ 0.7	107	9	48	30	49	1.44	− 0.27	0.37	0	7	12	5	14	ne.	F. M. Tague.
La Veta Pass	Costilla	9,000	1								3.01		1.01	0	13	0	9	22	w.	Clara M. Wright.
Leadville	Lake	10,248	15	52.6	− 0.7	75	8	32	3	38	2.89	+ 1.38	0.61	0	15	12	14	5		U. S. Weather Bureau.
Limon (near)	Elbert	5,360	4	67.4		96	8	41	28†	44	1.73		0.43	0	12	15	11	5	s.	F. L. Palmer.
Madrid	Las Animas		1								1.14		0.32	0	7					Thos. Sawers.
Marshall Pass	Sagauche	10,846	8								2.46	+ 1.20	1.50	0	6	19	11	1	w.	William D. Lillard.
Monument	El Paso	7,200		61.8		89	8†	35	25	44	1.36		0.65	0	9	10	12	9	w.	U. S. Forest Service.
North Lake	Las Animas	8,700	19								2.28	− 0.55	0.78	0	4	26	2	3	nw.	Jas. W. Ingmire.
Pueblo	Pueblo	4,734	23	72.4	+ 0.3	98	15	47	29	40	0.37	− 1.20	0.22	0	7	15	11	5	se.	U. S. Weather Bureau.
Rocky Ford (near)	Otero	4,177	22	73.1	− 0.8	100	18	47	29	47	0.69	− 0.73	0.35	0	4	21	6	4	e.	P. K. Blinn.
St. Elmo	Chaffee	9,500	2								2.76		0.87	0	13	13	11	7	sw.	Daniel Clark.
Salida	do	7,035	12	61.2	− 3.2	88	8†	35	26	50	1.14	− 0.32	0.73	0	5	23	5	3	w.	M. D. L. Buell.
Santa Clara	Huerfano	8,252	16	62.3	− 0.3	89	8	41	24†	42	2.35	− 0.50	0.60	0	9	7	22	2		Lincoln G. Morris.
Sheridan Lake	Kiowa	4,065	9																	Howard Gamble.
Stonewall	Las Animas	8,000	5								2.82		0.74	0	14	11	10	10		G. A. Storz.
Trinidad	do	5,994	15								2.69	+ 0.52	0.75	0	7					Mrs. Mattie H. Butler.
Victor	Teller	10,100	7	57.0	− 2.2	81	9	37	24	34	3.14	− 0.57	0.90	0	11	20	10	1	w.	Fred Jones.
Vilas	Baca	3,935	20																	Carrie Konkel.
Wayne	El Paso										0.91		0.28	0	6	12	16	3	se.	J. C. Groff.
Westcliffe	Custer	7,864	17	61.3	+ 0.9	89	15	34	29	50	1.50	− 0.07	0.52	0	10	8	18	5	nw.	Zack Jordan.
Winfield	Chaffee	9,765	1								2.52		0.31	0	15	1[a]	12[a]	17[a]	w.	John G. Payne.
Woodman Sanatorium	El Paso			66.3		93	8	42	28	38	1.87		0.48	0	9	11	12	8	s.	Dr. J. E. White.
Wortman	Lake	11,250	10								2.36	− 0.79	0.50	0	11	0	31	0	nw.	George C. Wortman.
New Mexico.																				
Abbott	Mora	5,771	2								2.02		0.75	0	6	19	9	3	s.	Agent E. P. & S. W. R. R.
Albert	Union	4,700	20	77.8	+ 1.3	102	6†	52	23	41	2.49	+ 0.06	1.20	0	4	20	6	5	w.	Andrew Knell.
Aurora	Colfax	8,849	2								2.70		0.64	0	15	1	28	2	nw.	Juanita Lucero.
Bell Ranch	San Miguel	4,500	12	77.2		103	8	51	23	43	1.43	− 0.54	0.68	0	6	17	10	4	s.	C. M. O'Donel.
Black Lake	Colfax	8,348	2								2.29		0.67	0	8	6	24	1	w.	Ralph T. Martinez.
Cabeza	San Miguel	5,406	2								2.00		1.10	0	3	19	8	4	sw.	Agent E. P. & S. W. R. R.
Campana	do	4,493	2								1.62		0.80	0	5	8	18	5	sw.	Do.
Chacon	Mora	9,000	2								2.97		0.90	0	8	7	21	3	nw.	Alfred Lucero.
Cimarron (near)	Colfax	6,385	7	66.6		90	9	44	26	40	3.28		0.90	0	11	9	17	5	s.	William French.
Clayton	Union	5,178	6	73.5		100	14	46	28	41	3.03		0.91	0	4	20	7	4	s.	Dr. W. W. Chilton.
Clovis	Curry	4,129		78.7		104	6†	52	30	42	2.23		1.70	0	3	24	2	5	se.	J. R. Barry.
Cuervo	Guadalupe	4,849	2	78.6		102	8	52	23†	37	2.28		0.98	0	7	11	17	3	s.	Agent E. P. & S. W. R. R.
Dawson	Colfax	6,396	2								1.45		0.60	0	5	10	18	3		Do.
Elizabethtown	do	8,465	5	55.3		84	14	28	4	51	3.30		1.20	0	9	12	16	3	nw.	Mabel Carrington.
Folsom	Union	6,399	11	68.6	+ 0.8	93	8†	45	26	38	2.35	− 0.26	0.50	0	10	23	7	1	sw.	David Rope.
Fort Union	Mora	6,835	51	64.4	− 2.5	91	15	41	26	46	2.36	− 1.52	0.60	0	7	20	7	4	sw.	M. C. Needham.
Hayden	Union	4,444	2	75.2		102	21	48	28	41	2.27		0.80	0	8	14	14	3	s.	J. B. Dickson.
Hoosier Ranch	Mora										3.47		1.90	0	5	15	12	4	sw.	W. H. Guthman.
Johnsons Park	Colfax	6,722	2								2.58		1.30	0	6	19	9	3	sw.	A. J. Meloche, jr.
Kappus	Quay	4,010									2.25		1.60	0	3					Anthony Kappus.
Lake Alice	Colfax	7,160	2								2.61		0.55	0	10	10	9	11	w.	John Campbell.
Logan	Quay	3,851	5	78.8		104	6†	53	23	46	3.90		1.83	0	4	26	1	3	se.	John B. Reneau.
Los Alamos	San Miguel	6,769	6											0						Antonio Pacheco.
Lykins (near)	Roosevelt	5,000	1								1.62		0.55	0	4	21	6	4	sw.	J. G. Buchanan.
Maxwell (near)	Colfax	5,894	4								2.72		0.81	0	9					Dan N. Jackson.
Melrose	Curry	4,400	3								2.20		1.59							Dr. B. M. Porter.
Miami Ranch	Colfax	6,000	3	67.0		93	7	41	26	42	1.97		1.46	0	7	8	21	2	w.	Farmers Development Co.
Montoya	Quay	4,335	2								3.17		2.46	0	3	4	19	8	w.	Agent E. P. & S. W. R. R.
Mt. Dora (near)	Colfax	5,600	1	71.6[a]		96	8†	47	28	46	2.31		1.00	0	5	14	10	7	sw.	Edward F. Grygla.
Nara Visa	Quay	4,225	5	77.2		103	8	51	28	36	2.57		1.69	0	5	26	3	2	sw.	George Bingle.
Ocate	Mora	7,500									1.72		0.59	0	4	14	14	3	w.	Mrs. John R. Strong.
Optimo	do	6,400																		R. K. Odell.
Palo Verde	do										2.95		1.00	0	5					G. R. Abernathy.
Pasamonte	Union		1								1.73		1.10	0	3	16	9	6	sw.	J. J. Heringa.
Pleasant View	Mora										2.99		1.32	0	6	23	6	2		R. W. Boulware.
Portales	Roosevelt	4,004	3																	Portales Irrigation Co.
Raton	Colfax	6,660	13	69.6	+ 1.1	93	6†	41	27	43	2.49	+ 0.35	0.75	0	10	7	23	1	sw.	Prof. R. C. Crum.
Rociada	San Miguel	8,200	7	61.9		86	20	36	26	41	2.37		0.77	0	8	13	15	3	w.	J. Ernest Dailey.
Rosebud	Union	4,500	1								2.99		1.86	0	5					H. A. Nachtrieb.
Roy	Mora	5,884	2								3.44		1.00	0	7	14	13	4	sw.	Agent E. P. & S. W. R. R.
San Jon	Quay	4,200	4	78.8		103	21	52	24†	42	5.84		3.96	0	5	23	4	4	sw.	Jesse T. White.
Solano	Mora	5,622	2	72.3		97	15	48	23	45	4.02		1.10	0	7	17	12	2	sw.	F. M. Hughes.
Springer	Colfax	5,857	15	71.0	+ 1.2	100	9	42	26	50	2.26	+ 0.13	0.90	0	7	21	9	1	w.	Agent A. T. & S. F. R. R.
Taylor	do	5,661	2								1.51		0.37	0	5	7	22	2	sw.	Agent E. P. & S. W. R. R.
Trementina	San Miguel	5,000	3																	Miss Alice Blake.
Tucumcari	Quay	4,194	6	79.2		105	21	53	23	43	5.01		2.30	0	6	27	2	2	sw.	J. F. Seaman.
Valley	Union	5,000	6								1.11		0.60	0	2	26	3	2	s.	Miss M. L. Payne.
Vance (near)	do										3.19		1.12	0	7	21	7	3	sw.	C. E. Anderson.
Vermejo Park	Colfax	7,600	6	63.1		87	14	39	7	46	1.58		1.00	0	4	13	11	7	w.	H. W. Adams.
Wagon Mound (near)	Mora	6,300	2	67.3		93	8	42	26	45	2.18		0.59	0	9	15	12	4	se.	Guy L. Barnes.

TABLE 1.—*Climatological data for August, 1911. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Texas.																				
Amarillo	Potter	3,676	19	75.8	+ 1.2	102	6	54	28	38	2.97	+ 0.16	2.63	0	5	18	11	2	se.	U. S. Weather Bureau.
Archer City	Archer		1								4.59		2.74	0	5	19	7	5	s.	Charles H. Thuman.
Arthur City	Lamar	590	19								2.33	+ 0.33	2.02	0	7	17	2	12	s.	V. V. Bright.
Bonham	Fannin	566	8	84.7		112	22	61	29	40	3.83		2.25	0	5					H. M. Norman.
Canadian	Hemphill	2,339	4								1.25			0	2					Canadian Academy.
Childress	Childress	1,869	18								2.35	+ 0.34	0.95	0	4	23	3	5	s.	W. E. Davis.
Chillicothe	Hardeman	1,406	3								3.41		2.37	0	4					A. B. Connor.
Clarendon	Donley	2,719	6	78.4		106	20†	57	24†	40	2.09		0.89	0	6	19	8	4	ne.	Whitfield Carhart.
Clarksville	Red River	442	11			107	10	60	1		3.55	+ 1.04	1.75	0	3					J. W. O'Neill.
Claude	Armstrong	3,397	6								2.90		1.57	0	4					Ft. W. & D. C. Ry.
Dalhart	Dallam	3,998	6	74.9		104	8	49	28†	42	1.92		1.20	0	6	23	0	8	sw.	F. L. Kennard.
Denison	Grayson		11								4.44	+ 1.40	1.64	0	12	16	2	13	s.	E. B. Wilson.
Finley	Bowie		1								0.36		0.20	0	2	20	0	11	s.	Robert L. Smith.
Henrietta	Clay	915	19	83.8	− 0.1	108	20†	63	29†	34	3.66	+ 1.21	2.50	0	8	15	7	9	s.	C. K. Brown.
Hereford	Deaf Smith	3,750	6																	A. C. Elliott.
Lewis Ferry	Bowie		2								2.50		1.25	0	3	15	0	16	s.	P. G. Ruff.
Memphis	Hall	2,067	6	78.6		103	6†	56	30	36	1.75		0.85	0	5	26	3	2		Ft. W. & D. C. Ry.
Miami	Roberts	2,743	5	78.3		107	19	56	23†	40	2.31		2.00	0	5	26	2	3	s.	J. E. Kinney.
Mobeetie	Wheeler		17								1.70		1.70	0	1	26	0	5	s.	Dr. W. J. Joss.
Nazareth	Castro		5																	Rev. P. A. Kaelin.
Ochiltree	Ochiltree		3								3.63		1.20	0	6					S. J. Allen.
Pampa	Gray	3,226	2																	B. E. Finley.
Panhandle	Carson	3,450	2																	J. Sid O'Keefe.
Paris	Lamar	592	22	82.8	+ 0.5	105	9†	59	31	34	4.20	+ 1.86	2.25	0	9	17	3	11	s.	Robert A. Miller.
Plemons	Hutchinson		4	76.8		104	20†	53	28	39	2.45		1.01	0	5	22	6	3	se.	C. S. Solomon.
Quanah	Hardeman	1,563	6	83.7		108	20	58	29	31	1.60		1.35	0	2	17	10	4	s.	William H. Crawford.
Ringo Crossing	Hopkins		1								2.42		1.18	0	4	14	3	14	ne.	H. J. Palmer.
Romero	Hartley		1	75.9		104	21	50	28	40	2.52		1.58	0	5	20	9	2	se.	R. S. Chamberlain.
Sherman	Grayson	745	18	83.6	+ 1.6	103	10†	61	27	30	6.82	+ 4.27	2.60	0	10	17	4	10	s.	R. A. Gibbs.
Stratford	Sherman	3,699	....	75.8		103	8†	50	28†	41	3.51		2.10	0	6	16	11	4	se.	J. W. Elliott.
Sulphur Springs	Hopkins	530	17																	John Neeley.
Texline	Dallam	4,694	6								1.60		1.60	0	1					Ft. W. & D. C. Ry.
Tulia	Swisher	3,501	13	75.4		102	20	53	30†	39	1.32	− 0.50	0.85	0	5	17	12	2	se.	Lou Mulhall.
Wichita Falls	Wichita	958	19								1.87	+ 0.13	0.55	0	8	23	6	2	s.	R. A. Thompson.
Winfield	Titus		1								1.35		0.44	0	5	14	13	4	se.	J. C. Bostick.
Kansas.																				
Alden	Rice	1,684	1								1.61		0.99	0	4	23	0	8	se.	L. B. Wait.
Anthony	Harper	1,329	14	77.5		107	21	48	30	41	4.41	+ 1.25	1.94	0	8	19	8	4	sw.	R. H. Beebe.
Ashland	Clark	1,951	23	77.1	− 2.5	107	20	51	30	43	6.32	+ 3.90	2.55	0	7	21	7	3	s.	C. W. Carson.
Burlington	Coffey	1,010	18	77.5	− 0.5	101	9†	46	29	42	3.23	− 1.40	1.51	0	4	4	27	0	s.	O. E. Sanford.
Chanute	Neosho	940	7	76.1		98	10	45	29	37	6.35		5.30	0	3	12	17	2	se.	C. W. Brown.
Coldwater	Comanche	2,090	14	77.2	− 2.9	104	20	52	29	33	5.47	+ 3.09	1.81	0	7	25	3	3	se.	J. L. Stanley.
Columbus	Cherokee	898	21	75.0	− 2.4	95	11†	49	29	29	6.74	+ 2.75	3.12	0	9	17	8	6	se.	O. E. Skinner.
Coolidge	Hamilton	3,348	14	74.5	− 1.8	109	20	49	31	46	2.78	+ 0.87	1.12	0	5	15	12	4	se.	W. R. Padley.
Cottonwood Falls	Chase	1,234	7	76.9		103	21	44	29	37	4.36		1.69	0	9	23	4	4	s.	E. B. Greene.
Council Grove	Morris	1,234	2	77.3		105	9	45	29	45	3.64		1.35	0	7	13	12	6	sw.	J. P. Blackledge.
Cunningham	Kingman	1,680	27	77.8	− 0.6	106	21	48	29	38	4.65	+ 1.74	2.90	0	4	20	9	2	s.	W. H. Morton.
Dodge City	Ford	2,513	37	75.0	− 1.5	102	20	51	29	33	2.21	− 0.38	0.87	0	6	14	13	4	se.	U. S. Weather Bureau.
El Dorado	Butler	1,291	9	76.3		99	21	46	29	32	3.67		1.92	0	7	18	12	1	s.	W. Y. Miller.
Ellinwood	Barton	1,790	36	77.3	− 0.5	103	20	43	29	40	2.50	− 0.58	1.21	0	5	12	18	1	se.	Martin Musil.
Emporia	Lyons	1,138	30	77.6	+ 1.0	104	10	48	29	36	3.11	− 0.72	1.06	0	7	19	11	1	s.	W. H. Boyles.
Eureka	Greenwood	1,079	15	75.8		99	9†	43	29	41	2.13	− 1.06	0.80	0	4	20	10	1	se.	W. S. Moonlight.
Fall River	do	925	15	76.6	− 1.6	99	9†	44	29	42	3.05	− 0.11	0.75	0	6	23	8	0	s.	J. McDaniel.
Fargo	Seward		1								6.16		1.83	0	5	21	9	1	s.	N. B. Swink.
Fredonia	Wilson	864	8	76.8		98	10	49	29	37	3.19		1.98	0	5	22	5	4	ne.	B. W. Holmes.
Garden City	Finney	2,836	22	75.2	− 1.3	106	19	51	25	48	1.89	+ 0.10	0.57	0	7	15	13	3	s.	B. F. Stocks.
Great Bend	Barton	1,850	2								3.77		2.70	0	5	23	4	4	se.	I. Pritchard.
Greensburg	Kiowa	2,235	4	76.5		104	20	50	29	36	3.98		1.85	0	6	24	4	3	s.	C. C. Raymond.
Grenola	Elk	1,116	23	76.4	− 1.5	102	21	47	30	40	2.28	− 0.09	1.32	0	5	19	8	4	se.	W. H. Lawyer.
Hess	Gray	2,700	5																	Fred Mallonee.
Howard	Elk	1,112	4								2.73		2.00	0	4	24	4	3	se.	J. W. Eby.
Hugoton	Stevens		7	75.8		114	20	48	28	50	2.73		0.79	0	7	17	10	4	s.	E. M. Anderson.
Hutchinson	Reno	1,535	21	77.2	− 0.8	105	21	45	29	39	2.29	− 0.49	1.32	0	5	23	5	3	s.	E. S. Webster.
Independence	Montgomery	800	37	76.9	− 2.9	99	20	45	30	41	3.04	− 0.11	1.75	0	6	16	6	9	se.	F. L. Kenoyer.
Iola	Allen	984	5	76.3	0.0	97	9	47	29	35	3.85	+ 0.38	2.82	0	6	17	9	5	s.	U. S. Weather Bureau.
Irene	Hamilton	3,440	1	75.8		105	8†	50	28	43	3.03		1.18	0	8	10	11	10	s.	N. M. Herbig.
Jetmore	Hodgeman	2,268	10	76.4		106	20	47	29	38	1.61	− 0.51	0.99	0	5	6[e]	17[e]	5[e]	se.	James Aiken.
Kingman	Kingman	1,504	3	78.1		106	21	47	29	36	3.67		2.51	0	5	16	12	3	sw.	B. B. Anawalt.
La Crosse	Rush	2,061	9	76.8		103	15	45	29	49	3.38		1.45	0	8	20	8	3	se.	Rodney Torrey.
Lakin	Kearny	2,993	21	75.1	− 2.2	108	20	49	25	43	1.48	− 0.44	0.60	0	4	19	9	3	se.	C. H. Longstreth.
Larned	Pawnee	2,090	26	77.6		106	20	48	29	38	1.78	− 0.93	1.06	0	7	22	4	5	s.	H. H. Wolcott.
Lebo	Coffey	1,138	25	76.7	− 0.3	99	10†	47	29	35	4.04	− 0.28	1.46	0	5	18	13	0	s.	J. J. Bowman.
Le Roy	do	990	2																	F. W. Schmitt.
Liberal	Seward	2,843	4	75.8		106	20	49	28	40	3.21		1.10	0	6	22	2	7	se.	Dr. R. T. Nichols.
Macksville	Stafford	2,032	22	75.4	− 1.4	101	21	47	29	39	2.89	− 0.11	1.11	0	5	12	9	10	s.	Mrs. Nelia Poling.
McPherson	McPherson	1,495	22	78.0	− 0.5	103	10	49	29	41	2.21	− 1.25	1.88	0	5	22	2	7	sw.	Ed. F. Haberlein.
Madison	Greenwood	1,074	10	76.2		100	10†	44	29	40	4.70	+ 0.83	1.69	0	7	10	19	2	se.	C. A. David.
Marion	Marion	1,310	18	77.3	− 1.6	100	21	44	29	37	3.03	− 0.17	1.63	0	6	14	16	1	s.	Jerry Forney.
Medicine Lodge	Barber	1,259	18	77.4	− 3.1	107	21	49	30	39	3.28	+ 0.97	1.10	0	7	20	7	4	s.	S. P. Garrison.
Medora	Reno	1,484	2	.....							1.69		1.43	0	4	15	2	14	s.	M. L. Rickenbrode.
Mount Hope	Sedgwick	1,410	14								3.50	+0.56	2.14	0	4	20	6	5	s.	H. N. Renfrew.
Neosho Rapids	Lyon	1,092	6																	W. H. McMullin.
Ness City	Ness	2,260	18																	J. K. Barnd.
Newton	Harvey	1,454	14	77.9	− 0.7	106	21	50	30	41	3.03	− 0.41	1.63	0	5	21	9	1	sw.	H. A. Brush.
Norwich	Kingman	1,496	15	78.9	− 1.2	104	21	51	29	36	3.78	+ 0.88	1.25	0	9	19	10	2	se.	N. I. Farris.
Oswego	Labette	899	17	76.0	− 2.8	97	10	49	29	31	5.21	+ 1.80	2.80	0	6	17	10	4	sw.	Jas. M. Currigan.
Plains	Meade	2,766	1	75.4		104	20	51	28	38	3.96		2.30	0	4	21	5	5		E. J. Henning.
Pratt	Pratt	1,950	16	77.6	− 2.3	105	21	44	29	41	3.47	+ 0.49	1.17	0	7					A. J. VanVranken.
Richfield	Morton			77.2		106	8	49	28	38	2.05		0.88	0	6					M. J. Allen.
Rome	Sumner	1,218	25	77.6	− 0.7	106	21	41	30	48	2.95	− 0.12	1.35	0	6	24	6	1	s.	D. M. Adams.
Sedan	Chautauqua	834	26	77.1	− 2.0	100	10	47	30	39	3.03	− 0.74	1.43	0	7	16	7	8	s.	A. Y. Buckles.
Toronto	Woodson	1,040	14	77.4	− 0.4	101	10	44	29	46	5.01	+ 1.89	2.95	0	6	23	0	8	s.	M. A. Webb.
Ulysses	Grant	3,027	20	76.2	− 2.2	105	8†	53	23†	38	4.23	+ 2.81	1.87	0	8	18[e]	6[e]	4[e]	se.	T. W. Marshall.
Walnut	Crawford	940	9	76.3		97	10	45	29	33	2.19		1.25	0	4	21	8	2	sw.	R. C. Harlan.
Wellington	Sumner	1,225	15	78.0	0.0	106	21	44	30	46	2.56	− 0.53	1.22	0	5	18	11	2	s.	E. O. G. Kelley.
Wichita	Sedgwick	1,377	24	77.2	− 0.3	101	21	54	29	32	4.32	+ 1.21	2.87	0	5	16	13	2	s.	U. S. Weather Bureau.
Winfield	Cowley	1,124	17	76.4	− 2.9	104	21	47	29†	38	3.76	+ 0.68	1.58	0	5	22	3	4	s.	M. B. Light.
Yates Center	Woodson	1,068	32	76.0	− 0.1	98	10†	46	29	38	4.23	+ 1.12	2.79	0	5	19[e]	10[e]	1[e]	s.	J. W. Tipton.

TABLE 1.—*Climatological data for August, 1911. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oklahoma.																				
Ada	Pontotoc	1,001	3	80.8	.....	107	21	57	30	35	3.86	.....	1.41	0	5	15	13	3	s.	W. S. Creveling.
Alva	Woods	1,350	6	77.5	.....	107	21	47	24	35	6.87	.....	2.80	0	7	23	0	8	e.	S. A. Stech.
Apache	Caddo	1,255	2	80.2	.....	106	20†	53	30	37	1.11	.....	0.45	0	5	25	3	3	se.	G. D. Teeter.
Arapaho	Custer	1,575	17	80.0	− 1.3	109	20	46	30	54	3.63	+ 1.59	1.40	0	6	24	3	4	s.	J. C. Brower.
Ardmore	Carter	872	10	84.2	+ 0.9	110	21	60	30	36	7.59	+ 4.91	2.70	0	9	18	3	10	s.	H. T. Nisbett.
Arnett	Ellis	2,136	7	74.6	.....	103	20	51	22†	39	2.52	.....	0.90	0	6	25	3	3	s.	C. H. Holmes.
Bartlesville	Washington	687	3	78.2	.....	105	10	48	30	39	3.83	.....	1.45	0	6	24	3	4	se.	Dr. A. P. Owens.
Beaver	Beaver	2,500	15	78.2	− 2.8	108	20	54	30	39	3.26	+ 0.90	1.26	0	7	23	5	3	s.	W. C. Frazer.
Blackburn	Pawnee	800	10	80.4	− 1.0	107	21	50	30	38	9.23	+ 5.62	2.58	0	6	23	2	6	se.	John Landis.
Cache	Comanche	1,350	5	78.2	.....	103	....	52	....	37[c]	2.28	.....	1.52	0	3	20	3	5	s.	Mrs. Frank Rush.
Calvin	Hughes	713	6	.....	.....	.....	.....	.....	.....	.....	3.76	.....	1.20	0	8	18	1	12	s.	Thomas Purcell.
Chandler	Lincoln	865	10	80.6	− 1.0	107	20†	53	30	34	2.97	− 0.39	0.93	0	5	21	1	9	s.	Chas. L. Kern.
Chattanooga	Comanche	1,150	5	83.9	.....	110	20	58	30	43	2.45	.....	1.20	0	5	21	7	3	se.	Squire Humble.
Chickasha	Grady	1,091	10	82.6	− 0.7	108	10†	55	30	38	1.52	− 0.45	0.59	0	6	30	1	0	e.	J. C. Good.
Cloud Chief	Washita	1,400	9	80.6	.....	107	20	54	29	41	1.97	.....	1.14	0	3	22	6	3	ne.	J. P. Stutzman.
Durant	Bryan	643	10	82.0	0.0	108	21	60	30†	36	4.04	+ 1.20	1.65	0	11	19	6	6	s.	Nelson Houk.
Eldorado	Jackson	1,456	4	82.6	.....	107	6†	58	29	37	2.16	.....	1.65	0	5	18	11	2	se.	T. W. Lanham.
Elk City	Beckham	.....	.....	78.0[i]	.....	101	.....	53	.....	33[i]	.....	.....	.....	0	.....	11	5	6	s.	R. S. Carlile.
El Reno	Canadian	1,400	20	81.5	+ 1.4	109	20	54	29	36	2.39	− 0.60	0.91	0	6	24	7	0	ne.	Rose E. Walker.
Enid	Garfield	1,269	10	78.4	− 2.8	105	20	49	30	42	4.99	+ 1.71	1.52	0	8	24	6	1	s.	Uri B. Worcester.
Erick	Beckham	2,058	6	78.6	.....	109	20	53	29	38	1.69	.....	1.53	0	3	21	7	3	s.	A. W. Hanes.
Fairland	Ottawa	839	11	77.0	− 2.4	100	10	49	29	34	3.86	− 0.43	1.57	0	6	18	9	4	s.	C. W. Prier.
Fort Gibson	Muskogee	556	6	.....	.....	.....	.....	.....	.....	.....	6.03	.....	1.60	0	8	18	1	12	e.	John T. Welsh.
Frederick	Tillman	1,293	5	83.6	.....	109	20	57	29	37	4.27	.....	1.77	0	6	22	6	3	se.	B. B. Bradley.
Goodwell	Texas	3,300	1	76.8	.....	105	20	50	28	43	2.59	.....	0.77	0	6	19	4	8	s.	S. W. Black.
Guthrie	Logan	1,000	18	81.4	0.0	110	20	51	30	41	3.50	+ 0.62	1.25	0	6	25	0	6	s.	S. E. Snyder.
Guymon	Texas	3,133	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. L. Mordt.
Harrington	Roger Mills	2,200	7	76.8	.....	103	20	51	29	35	1.24	.....	0.58	0	5	20	8	3	sw.	T. Compton.
Hartshorne	Pittsburg	700	12	81.4	− 2.6	103	10†	56	30	31	3.74	+ 0.42	2.55	0	7	17	7	7	n.	Robt. Holmes.
Healdton	Carter	900	17	82.3	+ 0.1	111	20	57	30	43	10.05	+ 7.35	5.05	0	6	18	12	1	ne.	C. H. Heald.
Helena	Alfalfa	1,396	3	78.0	.....	104	20†	49	29	34	5.83	.....	2.58	0	6	21	9	1	s.	R. E. Ellis.
Hennessey	Kingfisher	1,166	16	77.8	− 4.3	107	21	47	22	43	2.57	− 0.31	1.14	0	5	13	18	0	s.	Mrs. M. C. Parks.
Hobart	Kiowa	1,396	8	80.6	.....	106	20†	54	29	37	2.32	.....	1.42	0	6	20	8	3	se.	Leland Turnbull.
Holdenville	Hughes	900	10	80.8	− 0.3	109	21	56	30	34	3.92	+ 0.11	1.82	0	8	17	12	2	s.	Eula L. Rutherford.
Hooker	Texas	3,038	5	77.0	.....	110	20	51	28	45	2.74	.....	0.82	0	5	16	0	15	se.	H. N. Kelly.
Hurley	Cimarron	4,200	3	76.2	.....	103	8†	48	28†	44	2.12	.....	0.97	0	4	8	21	2	sw.	Dr. C. W. Meyers.
Idabel	McCurtain	474	3	82.4	.....	109	11	59	30†	33	3.70	.....	2.06	0	5	24	3	4	e.	M. L. Henderson.
Jefferson	Grant	1,062	17	76.5	− 4.5	102	21	45	29	44	4.49	+ 1.08	1.24	0	8	20	10	1	s.	T. E. Beck.
Kenton	Cimarron	4,000	10	74.8	− 1.1	102	....	48	....	43[b]	1.08	− 1.06	0.64	0	4	23	3	3	s.	Wm. M. Guy.
Kingfisher	Kingfisher	1,046	14	81.0	− 1.1	109	20	52	29	37	3.43	+ 0.72	1.20	0	7	20	7	4	s.	J. C. Cross.
McAlester	Pittsburg	698	15	82.1	.....	106	20†	57	30	34	5.02	+ 1.72	2.55	0	9	23	3	5	n.	Wm. Noble.
McComb	Pottawattomie	1,200	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. E. McNair.
Mangum	Greer	1,585	18	83.2	+ 1.1	108	20	56	28†	37	0.36	− 2.20	0.20	0	2	20	4	7	se.	F. D. Dodson.
Marlow	Stephens	1,292	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. B. Anthony.
May	Harper	.....	.....	76.4	.....	105	20	51	29	39	4.44	.....	1.48	0	6	18	9	4	se.	G. C. Gray.
Meeker	Lincoln	1,030	17	81.2	+ 0.1	110	20	50	30	42	1.26	− 1.64	0.66	0	2	25	0	6	s.	Dr. J. H. Baugh.
Muskogee	Muskogee	614	12	78.4	− 2.9	99	10†	53	30	30	7.62	+ 5.04	2.00	0	6	22	4	5	e.	J. Harry Randall.
Mutual	Woodward	.....	3	77.1	.....	106	20	52	29	39	3.94	.....	2.00	0	5	25	2	4	s.	Thos. Martin.
Neola	Caddo	1,500	5	80.0	.....	107	20	53	29	36	0.78	.....	0.50	0	4	19	9	3	se.	R. N. Schooling.
Newkirk	Kay	1,149	13	81.0	− 0.8	107	21	52	29†	47	7.62	+ 3.98	3.30	0	5	17	12	2	s.	P. H. Albright & Co.
Norman	Cleveland	1,171	16	80.1	− 1.3	106	20†	53	30	35	1.52	− 0.60	0.90	0	4	11	18	2	s.	S. E. Boyd.
Oakwood	Dewey	1,854	1	77.5	.....	105	20	52	29	36	2.83	.....	2.01	0	7	24	4	3	s.	Dr. F. P. Osborn.
Okeene	Blaine	1,194	7	79.8	.....	107	21	51	29	40	3.30	.....	1.25	0	7	25	4	2	s.	Dr. L. H. Murdoch.
Oklahoma	Oklahoma	1,247	20	80.6	+ 2.1	105	21	54	29	31	0.94	− 2.23	0.50	0	7	19	10	2	s.	U. S. Weather Bureau.
Okmulgee	Okmulgee	752	7	78.8	.....	106	21	53	30	32	6.71	.....	1.76	0	6	20	4	7	se.	J. L. Maynard.
Pauls Valley	Garvin	880	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. Foss.
Pawhuska	Osage	918	11	78.6	− 1.6	102	9†	48	30	41	3.00	− 0.87	1.22	0	6	17	10	4	ne.	R. C. Block.
Perry	Noble	920	12	79.7	− 1.4	107	21	47	29	37	5.78	+ 1.59	1.83	0	8	24	4	3	e.	J. A. Douglass.
Ravia	Johnston	796	8	82.6	.....	109	9†	59	30†	40	4.47	.....	1.73	0	7	23	2	6	s.	R. G. Guptill.
Sac and Fox Agency	Lincoln	900	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. R. Gayle.
Shawnee	Pottawattomie	1,041	10	80.4	− 0.6	108	20	54	30	35	2.97	− 0.07	1.51	0	9	12	12	7	se.	Mrs. Kate Chatman.
Snyder	Kiowa	1,356	4	82.6	.....	107	20†	56	29	34	0.68	.....	0.33	0	3	22	7	2	se.	Dr. W. C. Woodard.
Stillwater	Payne	880	18	78.7	− 1.8	105	21	52	30	37	7.65	+ 4.24	2.31	0	8	25	2	4	ne.	A. R. Evans.
Tulsa	Tulsa	700	22	79.1	.....	104	9†	53	30	36	7.90	+ 4.97	2.23	0	9	20	10	1	s.	Dr. H. M. Hutchinson.
Vinita	Craig	698	7	77.0	.....	96	10†	51	30	31	5.56	.....	2.51	0	4	20	0	11	sw.	W. C. Chamberlain.
Wagoner	Wagoner	588	14	77.4	− 3.5	98	10†	51	30	34	7.16	+ 4.61	2.62	0	6	19	8	4	s.	S. L. Hatfield.
Waukomis	Garfield	1,258	14	79.0	− 2.7	109	21	50	29†	41	4.15	+ 1.13	1.60	0	6	22	6	3	e.	R. C. Shades.
Waurika	Jefferson	988	1	82.1	.....	106	21	60	30	37	3.44	.....	0.83	0	6	21	7	3	n.	B. A. Swindler.
Weatherford	Custer	1,639	10	79.0	− 2.5	106	20†	52	29	37	2.13	+ 0.18	1.16	0	6	19	8	4	s.	M. D. Reed.
Webbers Falls	Muskogee	479	12	78.4	− 2.8	101	10	49	30†	40	4.60	+ 1.44	1.95	0	8	8	18	5	e.	B. D. Boulineau.
Whiteagle	Kay	945	7	78.7	.....	105	21	50	30	36	6.11	.....	1.64	0	6	25	4	2	s.	J. M. Dankwardt.
Woodward	Woodward	1,893	8	77.1	.....	106	20†	52	29	39	5.29	.....	1.29	0	9	25	3	3	se.	R. A. Boyle.
Missouri.																				
Belle	Maries	.....	19	74.4	− 3.0	104	9†	43	15	50	4.40	+ 0.88	1.90	0	7	5[c]	17[c]	6[c]	s.[c]	A. J. Woffard.
Birchtree	Shannon	1,200	19	74.0	− 2.0	96	9	49	30	31	9.57	+ 5.66	4.93	0	9	16	5	10	s.	V. H. Kirkendall.
Cardwell	Dunklin	.....	1	77.6	.....	97	9	55	30	28	11.36	.....	3.52	0	13	10	9	12	s.	E. M. Perry.
Cape Girardeau	Cape Girardeau	305	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D. L. Albert.
Caruthersville	Pemiscot	.....	21	77.6	− 1.2	97	10	56	30†	28	4.73	+ 1.76	1.40	0	14	18	5	8	e.	H. E. Averill.
Cassville	Barry	.....	1	73.6	.....	99	10	45	30	41	4.89	.....	1.72	0	9	19	5	7	ne.	Mrs. Zuma Bloomer.
Dean	McDonald	.....	13	74.6	− 3.7	100	10	46	30	39	5.47	+ 1.33	2.49	0	8	24	0	7	.....	H. E. Dean.
Doniphan	Ripley	440	8	76.3	.....	98	8†	51	30†	32	5.52	.....	1.50	0	10	15	5	11	ne.	W. W. Martin.
Gano	Dent	.....	8	75.6	.....	108	9	48	29	38	3.49	.....	1.61	0	7	15	6	10	s.	A. C. Leech.
Goodland	Iron	900	7	73.8	.....	106	9	43	31	43	2.85	.....	1.18	0	9	11	14	6	s.	F. M. Adams.
Greenville	Wayne	.....	17	74.4[l]	− 3.1	100	9	49	30	37[l]	6.87	+ 3.99	1.26	0	14	3[l]	16[l]	0[l]	s.[l]	A. G. Templeton.
Hollister	Taney	1,000	2	75.2	.....	96	11	50	30	32	9.50	.....	2.15	0	10	16	0	15	sw.	W. P. Chapman.
Ironton §§	Iron	925	34	75.0	+ 0.7	102	8†	44	31	42	4.95	+ 1.52	1.35	0	11	8	11	12	ne.	W. H. Delano.
Jackson	Cape Girardeau	458	21	76.6	+ 0.9	100	8	51	30	33	4.98	+ 1.92	1.20	0	13	6	11	14	s.	L. M. Bean.
Joplin	Jasper	979	31	.....	.....	99	11	.....	.....	.....	7.28	+ 3.18	4.00	0	6	21	7	3	se.	Miss Ruth Smith.
Koshkonong	Oregon	911	12	74.2	− 2.9	94	9	53	30	28	9.14	+ 6.08	3.70	0	14	9[a]	9[a]	12[a]	e.[a]	J. W. Hitt.
Lamar §§	Barton	964	31	76.4	− 0.8	98	10	49	29	35	8.95	+ 4.82	3.50	0	9	20	2	9	ne.	E. H. Adams.
Marble Hill	Bollinger	420	19	76.8	0.0	101	10	52	29	35	2.77	− 0.13	0.92	0	8	13[c]	11[c]	4[c]	s.[f]	A. F. Hendrix.
Mountaingrove	Wright	1,490	13	74.1	− 0.9	97	9	49	30	31	5.86	+ 2.01	1.90	0	7	12	4	15	s.	Mo. Fruit Exp. Station.
Mount Vernon	Lawrence	1,480	35	74.3	− 3.5	100	10	49	30	30	12.04	+ 7.94	4.00	0	9	12	12	7	sw.	J. R. White & Son.
Neosho	Newton	1,023	29	74.8	− 2.1	98	10	47	29†	37	9.04	+ 5.09	5.17	0	8	20	3	8	ne.	W. O. Buck.
New Madrid	New Madrid	285	18	.....	.....	.....	.....	.....	.....	.....	4.36	+ 0.91	1.20	0	12	14	3	14	s.	Miss Josie Smith.
Oakfield	Franklin	793	20	75.6	− 1.4	100	9†	50	29†	35	3.82	+ 0.61	1.96	0	7	8	9	14	s.	E. E. Steines.
Olden	Howell	1,246	22	74.8	− 1.5	97	9	50	30	29	9.99	+ 6.82	4.56	0	11	18	7	6	se.	J. D. Evans.

TABLE 1.—*Climatological data for August, 1911. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Missouri*—Continued.**																				
Rolla	Phelps	1,092	31	75.6	+ 0.6	105	9	50	30	35	2.09	− 1.68	1.05	0	7	14	9	8	se.	Prof. P. J. Wilkins.
Springfield	Greene	1,350	23	74.1	− 0.7	94	9	53	30	25	6.92	+ 2.61	1.92	0	11	14	6	11	se.	U. S. Weather Bureau.
Steelville	Crawford	746	15	75.2	.....	106	9	41	30	44	4.00	+ 0.59	1.64	0	6	6[e]	7[e]	15[e]	sw.[e]	Edwin Pumphrey.
Kentucky.																				
Blandville	Ballard	445	29	75.4	− 1.4	96	8	54	30	30	3.85	+ 0.83	0.82	0	14	5	16	10	sw.	E. W. Horr.
Lynnville	Graves	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.																				
Arlington	Shelby	.....	29	77.8	− 0.1	98	8†	55	30	27	5.22	+ 2.02	1.22	0	13	12	5	14	s.	A. Thomas B. Etheridge.
Bolivar	Hardeman	450	24	76.6	− 1.4	95	8†	58	30	25	5.27	+ 2.71	1.01	0	14	16	2	13	s.	Miss Mary A. Smith.
Brownsville	Haywood	361	26	77.4	− 0.7	94	8†	57	30	24	5.16	+ 2.29	1.15	0	13	8	16	7	s.	Miss Hattie N. Moses.
Covington	Tipton	311	24	76.6	− 1.9	94	9	59	30	30	5.52	+ 2.30	1.60	0	11	13	0	18	s.	James S. Ruffin.
Dyersburg	Dyer	310	28	78.6	0.0	96	9	58	30	26	3.07	− 0.05	1.00	0	8	16	2	13	se.	Miss Martha A. Sinclair.
Jackson	Madison	450	18	78.7	− 0.1	99	9	57	30	32	9.24	+ 6.56	3.06	0	11	10[f]	9[f]	6[f]	sw.	Shelby A. Robert.
Kenton	Obion	325	9	77.0	.....	96	8	55	30	26	5.56	.....	2.33	0	16	14	4	13	s.	George S. Martin.
Memphis	Shelby	409	40	78.2	− 1.0	96	9	58	30	21	5.64	+ 2.44	1.51	0	15	5	15	11	se.	U. S. Weather Bureau.
Milan	Gibson	440	28	76.0	− 1.8	91	8†	56	30	22	9.18	+ 5.71	1.84	0	16	11	2	18	s.	Orlando F. Cantwell.
Trenton	....do	345	28	76.4	− 0.9	96	8†	51	31	34	5.75	+ 2.73	1.14	0	11	15	7	9	se.	F. L. Dennison.
Union City	Obion	360	13	78.6	+ 0.1	105	8	57	30	36	5.50	+ 2.86	1.46	0	16	9	15	7	se.	J. B. Kimzey.
Arkansas.																				
Alicia	Lawrence	.....	7	77.2[b]	.....	96	....	55	....	24[b]	9.30	.....	2.20	0	14	13	7	11	.....	McCullough & Guelck.
Amity	Clark	250	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. W. Campbell.
Arkadelphia (near)	....do	250	4	80.0	.....	107	9	55	30	35	7.76	.....	2.28	0	13	10	12	9	sw.	J. A. Ross.
Arkansas City	Desha	145	28	.....	.....	.....	.....	.....	.....	.....	14.98	+11.83	5.50	0	14	.....	.....	.....	.....	W. C. Blundell.
Batesville	Independence	271	6	.....	.....	.....	.....	.....	.....	.....	15.20	.....	3.90	0	16	.....	.....	.....	.....	Lelia I. Teter.
Bee Branch	Van Buren	.....	19	77.2	− 1.7	101	9	52	30†	36	9.50	+ 6.41	2.75	0	13	9	7	15	.....	J. E. Scanlan.
Benton	Saline	283	4	77.2	.....	101	9	52	30	34[a]	5.48	.....	1.75	0	9	12	7	12	s.	P. B. Jackson.
Bentonville	Benton	1,303	6	74.6	− 1.9	96	10	49	30	33	3.29	− 0.75	1.00	0	9	16	6	9	ne.	U. S. Weather Bureau.
Bergman	Boone	1,324	15	71.8	− 3.9	100	10	45	30†	38	7.00	+ 3.76	2.00	0	11	14	8	9	ne.	John T. Maxey.
Black Rock	Lawrence	259	7	.....	.....	.....	.....	.....	.....	.....	9.57	.....	3.26	0	12	.....	.....	.....	.....	S. J. Howe.
Brinkley	Monroe	226	25	79.0	− 0.3	102	9	54	31	34	11.13	+ 8.51	3.34	0	14	.....	.....	.....	.....	H. L. D. Whitson.
Calico Rock	Izard	361	7	.....	.....	.....	.....	.....	.....	.....	12.31	.....	4.25	0	11	.....	.....	.....	.....	W. H. Stoner.
Camden	Ouachita	158	26	80.1	− 0.1	101	9	55	30†	33	5.81	+ 3.69	1.02	0	14	.....	.....	.....	.....	R. H. Quarterman.
Centerpoint	Howard	470	11	81.0	− 1.5	104	9†	55	30	32	3.53	+ 1.37	1.20	0	7	10	10	11	se.	J. M. Huddleston.
Clarendon	Monroe	171	7	.....	.....	.....	.....	.....	.....	.....	10.83	.....	4.01	0	14	.....	.....	.....	.....	Mrs. B. E. Bishop.
Conway	Faulkner	309	28	78.2	− 1.0	101	9	54	30	30	9.58	+ 6.33	3.10	0	19	9	14	8	s.	G. H. Burr.
Corning	Clay	293	19	77.2	− 1.0	99	....	53	31	31[a]	4.43	+ 0.66	1.77	0	13	15	5	11	.....	Jacob Brobst.
Dardanelle	Yell	330	25	76.8	.....	99	8	53	30	39	7.38	+ 4.11	1.74	0	14	.....	.....	.....	.....	A. Bernard.
Dodd City	Marion	1,175	30	75.8	− 2.1	99	8†	49	....	35[c]	19.54	+15.57	7.37	0	13	.....	.....	.....	s.	Neal Dodd.
Dutton	Madison	.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. M. Ricketts.
Eldorado	Union	265	7	80.0	.....	99	9	57	30	28	10.04	.....	2.05	0	13	.....	.....	.....	.....	Jeff J. Babb.
England	Lonoke	.....	5	79.5	.....	103	9	55	30	33	7.83	.....	1.85	0	15	8	1	22	sw.	J. C. Chenault.
Eureka Springs	Carroll	1,465	9	75.6	.....	98	10	50	30	31	7.08	.....	1.78	0	9	11	14	6	ne.	George W. Nicholds.
Fayetteville	Washington	1,451	22	76.0	− 0.3	98	10†	47	30	36	3.97	− 0.43	1.25	0	10	14	13	4	sw.	University of Arkansas.
Fordyce	Dallas	.....	7	79.4	.....	101	9	57	30	29[c]	11.41	.....	2.80	0	15	8	14	9	s.	A. Tredick.
Fort Smith	Sebastian	481	29	79.4	0.0	102	10	56	30	28	6.25	+ 2.59	2.79	0	11	15	4	12	e.	U. S. Weather Bureau.
Fulton	Hempstead	264	7	.....	.....	.....	.....	.....	.....	.....	3.50	.....	1.20	0	10	.....	.....	.....	.....	B. C. Logan.
Hardy	Sharp	643	13	76.0	− 2.9	98	8†	52	30	28	15.50	+12.02	5.80	0	12	7	11	13	sw.	C. A. Caywood.
Helena	Phillips	182	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. F. Modisett.
Hot Springs	Garland	600	5	78.8	.....	105	9†	52	30	35	5.20	.....	1.60	0	10	7	19	5	s.	Hot Springs Water Co.
Huttig	Union	85	4	80.5	.....	100	9	59	....	30[a]	8.65	.....	3.80	0	10	7	23	1	.....	C. A. Berry.
Jonesboro	Craighead	345	16	76.8	− 2.8	102	8	49	31	34	8.00	+ 4.24	1.60	0	14	6	18	7	s.	Benedictine Sisters.
Junction	Union	.....	18	78.8	− 1.7	94	8†	57	31	24	5.46	+ 2.78	1.56	0	6	13	8	10	w.	J. A. Lowderbach.
Lake Farm	Jefferson	195	4	79.0	.....	103	9	52	30	34	8.39	.....	2.02	0	11	8	19	4	s.	R. H. Gillespie.
Lewisville	Lafayette	262	8	82.6[d]	.....	105	9†	57	.....	34[d]	4.70	.....	1.50	0	11	.....	.....	.....	.....	F. W. Youmans.
Little Rock	Pulaski	357	32	78.5	− 0.7	102	9	60	30	26	8.88	+ 5.23	2.99	0	14	10	5	16	e.	U. S. Weather Bureau.
Lutherville	Johnson	775	14	77.3	− 1.1	100	9†	51	30	31	5.92	+ 1.87	1.60	0	16	11	14	6	ne.	W. R. Hentschel.
Malvern	Hot Spring	277	24	77.3	− 2.2	104	9	53	30	32	4.67	+ 1.65	0.83	0	13	.....	.....	.....	.....	Miss L. C. Smith.
Mammoth Spring	Fulton	512	7	75.9	.....	97	9	48	31	35	8.86	.....	3.75	0	12	10	15	6	.....	F. Wallick.
Marked Tree	Poinsett	229	7	.....	.....	.....	.....	.....	.....	.....	9.49	.....	2.24	0	16	.....	.....	.....	.....	L. Smith.
Mena	Polk	1,100	25	78.1	− 1.4	102	10	53	30	38	9.26	+ 5.12	4.44	0	11	15	12	4	ne.	R. R. St. John.
Newport	Jackson	231	27	78.7	− 0.5	98	9	57	30	29	9.97	+ 6.89	2.06	0	15	.....	.....	.....	.....	Chas. Sprigg.
Ozark	Franklin	377	20	80.0	− 2.1	103	10†	55	30	32	4.98	+ 1.02	1.04	0	10	14	10	7	e.	R. M. Adams.
Pine Bluff	Jefferson	215	23	79.8	− 1.6	102	9	58	31	29	8.31	+ 5.72	3.04	0	14	.....	.....	.....	.....	J. M. Hudson.
Pocahontas	Randolph	.....	19	77.6	− 1.2	99	8†	54	31	31	10.67	+ 6.45	2.60	0	15	8	11	12	.....	Benedictine Sisters.
Pond	Benton	1,250	14	74.4	− 2.8	97	10	49	30†	36	3.86	+ 0.12	1.27	0	5	12	10	9	sw.	A. F. Stevens.
Portland	Ashley	122	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. A. Corson.
Prescott	Nevada	327	23	80.2	− 1.0	104	9	52	30	35	5.50	+ 2.67	1.73	0	17	.....	.....	.....	.....	A. M. Ellsworth.
Rogers	Benton	1,385	20	74.9	− 3.0	97	10	50	30†	36	3.02	− 0.57	1.15	0	6	13	10	8	s.	Carl A. Starck.
Springbank	Miller	182	4	.....	.....	.....	.....	.....	.....	.....	5.18	.....	2.08	0	13	.....	.....	.....	.....	G. Field.
Stuttgart	Arkansas	495	24	79.5	+ 0.1	102	9	55	30	30	11.86	+ 8.48	4.70	0	13	14	11	6	sw.	H. A. Buerkle.
Subiaco	Logan	1,050	14	78.2	− 2.9	104	10	57	2	33	6.65	+ 2.74	2.27	0	14	16	11	4	e.	New Subiaco Abbey.
Swain	Newton	2,300	....	73.2	.....	98	9	51	30	23	7.11	.....	1.92	0	16	13	5	13	s.	George Paxton.
Texarkana	Miller	332	27	81.5	− 0.2	101	8†	59	30	26	3.51	+ 1.39	0.83	0	7	.....	.....	.....	.....	D. E. Moore.
Warren	Bradley	304	16	79.4	− 2.3	101	9†	56	30	30	10.52	+ 7.54	2.62	0	13	.....	.....	.....	.....	W. J. Savage.
Whitecliffs	Little River	206	7	.....	.....	.....	.....	.....	.....	.....	4.30	.....	2.05	0	6	.....	.....	.....	.....	John E. Payton.
Wiggs	Garland	.....	18	77.6	− 3.6	102	10	49	30	37	4.72	+ 0.78	0.89	0	15	6	19	6	sw.	S. D. Jester.
Wynne	Cross	250	3	78.9	.....	99	8	57	30†	28[a]	11.71	.....	4.53	0	16	.....	.....	.....	.....	John Seals.
Mississippi.																				
Anguilla	Sharkey	107	3	79.6	.....	98	9	59	30	26	4.59	.....	1.50	0	7	8	13	10	sw.	E. W. Cook.
Austin	Tunica	200	15	78.8	− 0.7	100	9	56	30	29	6.43	+ 2.52	1.17	0	13	12	6	13	se.	H. J. Irvine.
Batesville	Panola	230	24	78.8	− 0.4	99	9	59	30	26	5.33	+ 2.08	1.12	0	12	13	2	16	w.	J. M. Cox.
Big Creek	Calhoun	.....	....	79.4[a]	.....	99	9	65[a]	24	28[a]	8.46	.....	3.00	0	12	11[a]	7[a]	6[a]	s.	J. P. Havens.
Byhalia	Marshall	390	2	.....	.....	.....	.....	.....	.....	.....	6.43	.....	1.67	0	15	11	13	7	sw.	Tallahatchie Drainage Com.
Canton	Madison	228	21	80.6	+ 0.2	100	10	62	30	28	6.51	+ 2.94	4.11	0	13	5	20	6	se.	Dr. G. W. Smith-Vaniz.
Charleston	Tallahatchie	.....	1	79.8[a]	.....	100	9	62	29	31[a]	4.50	.....	1.70	0	9	.....	.....	.....	.....	W. B. Burke.
Clarksdale	Coahoma	177	4	78.8	.....	100	9	57	30	27	13.15	.....	5.16	0	15	9	4	18	s.	A. C. Tuttle.
Coffeeville	Yalobusha	241	2	.....	.....	.....	.....	.....	.....	.....	6.14	.....	1.18	0	13	9	16	6	s.	Tallahatchie Drainage Com.
Corinth	Alcorn	470	23	78.0	− 0.4	97	8†	62	30	30	9.03	+ 5.44	3.36	0	18	16	1	14	se.	M. A. Candler.
Crenshaw	Panola	187	2	.....	.....	.....	.....	.....	.....	.....	8.27	.....	2.60	0	17	9	15	7	sw.	Tallahatchie Drainage Com.
Denmark	Lafayette	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.65	.....	2.00	0	13	.....	.....	.....	.....	Do.
Duck Hill	Montgomery	.....	12	79.8[f]	− 0.1	99	9	60[e]	28	31[f]	5.21	+ 2.00	.....	0	9	5[f]	12[f]	8[f]	nw.	W. H. Eskridge.
Edwards	Hinds	222	24	80.9	− 0.7	102	10	62	30	27	3.40	− 0.61	0.75	0	11	14	15	2	s.	E. F. Farr.

TABLE 1.—*Climatological data for August, 1911. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Mississippi—Contd.																				
Enid	Tallahatchie		2								7.57		2.66	0	14				s.	Tallahatchie Drainage Com.
Fayette	Jefferson	270	10	79.5	− 0.4	97	10	62	31	27	6.37	+ 1.29	3.01	0	6	12	17	2	sw.	T. L. Darden.
Greenville	Washington	125	24	80.5	− 0.8	100	9	61	30	26	13.20	+ 9.45	4.64	0	15	15	3	13	sw.	F. L. Harbison.
Greenwood	Leflore	140	11	80.4	− 0.4	103	9	60	30	30	7.43	+ 3.91	4.40	0	13	14	11	6	se.	J. H. Stephen.
Grenada	Grenada	124	2								5.21		0.95	0	12	18	5	8	s.	Tallahatchie Drainage Com.
Hernando	De Soto	391	23	78.9	− 0.7	100	9	55	30	28	5.08		0.84	0	15	8	5	18	se.	W. F. Wood.
Hickory Flat	Benton	435	2								5.32		1.35	0	14	6	19	6		Tallahatchie Drainage Com.
Holly Springs	Marshall	600	24	76.8	− 2.5	96	9	57	30	25	8.81	+ 5.09	1.35	0	18	13	3	15	se.	L. B. Mosby.
Kosciusko	Attala	430	21	79.2	− 0.2	98	9	61	30	27	4.44	+ 0.55	1.08	0	15	12	15	4	e.	E. L. Lucas.
Lake Cormorant	De Soto	206	2								3.87		0.65	0	15	4	24	3	se.	Tallahatchie Drainage Com.
Lula	Coahoma	182	2								5.57		2.23	0	10	15[a]	5[a]	10[a]		Do.
Malone	Marshall		2								9.89		2.61	0	17					Do.
Marks	Quitman	163	2								10.73		2.80	0	12					Do.
Natchez	Adams	206	23	80.2	− 1.5	98	10	63	31	27	5.51	+ 0.75	1.83	0	10	15	0	16	nw.	F. L. Garrity.
New Albany	Union	398	2								6.04		1.31	0	13	9	18	4	sw.	Tallahatchie Drainage Com.
Pontotoc	Pontotoc	475	22	77.2	− 1.5	94	10	60	30	23	6.29	+ 2.65	1.50	0	11	8	16	7	se.	Dr. C. W. Bolton.
Port Gibson	Claiborne	116	23	80.0	− 0.9	99	10	61	30†	29	6.00	+ 2.22	4.00	0	12	16	2	13	e.	H. H. Crisler.
Rosedale	Bolivar	143	3	79.7		100	9	59	30†	28	12.66		2.10	0	13	15	2	14	sw.	T. J. Murray.
Senatobia	Tate	284	2								7.72		1.62	0	18	19	0	12	s.	Tallahatchie Drainage Com.
Shoccoe	Madison		8	79.0		100	9†	60	30	30	3.08	− 1.79	1.18	0	10	15	12	4	s.	J. C. Pitchford.
Suffolk	Franklin		10	80.2	− 0.8	98	9	63	30	27	3.80	− 0.69	0.81	0	17	13	9	9	sw.	Prof. George H. Kent.
Tchula	Holmes	130	6	80.8		99	9†	61	30	27	7.31		1.59	0	9	4[b]	18[b]	7[b]	w.	Dr. M. P. Winkler.
Utica	Hinds	287	7	79.6		97	10	63	30	25	3.20		1.05	0	10	14	6	11	sw.	Dr. J. B. Dudley.
Vicksburg	Warren	247	40	80.2	+ 0.6	98	10	63	30	22	2.86	− 0.67	0.84	0	14	7	13	11	se.	U. S. Weather Bureau.
Water Valley	Yalobusha	300	22	78.6	− 1.5	99	9	59	30†	28	9.17	+ 5.82	2.00	0	15	16	8	7	sw.	Miss Loula Erikson.
Woodville	Wilkinson	560	18	80.0	− 1.2	99	10	65	31	28	6.14	+ 0.58	2.00	0	10	15	14	2	se.	James E. Lee.
Yazoo City	Yazoo	116	17	80.2	− 0.6	98	8†	62	30†	27	6.35	+ 1.89	2.89	0	9	21	0	10	se.	W. H. Courts.
Louisiana.																				
Abbeville	Vermilion	18	23	82.0	+ 0.4	99	9	69	2	26	7.00	+ 1.33	1.74	0	18	13	8	10	sw.	C. J. Edwards.
Alexandria	Rapides	77	23	81.2	− 0.9	99	9†	66	2†	28	3.85	− 0.27	1.27	0	8	10	6	15	s.	Nellie Graham.
Amite	Tangipahoa	130	23	81.0	− 0.3	98	9†	67	25	27	9.94	+ 3.31	1.14	0	18	7	22	2	n.	Lulu M. Wentz.
Avoca Island	St. Mary																			J. N. Pharr & Sons (Ltd.).
Baton Rouge	East Baton Rouge	60	23	80.4	− 0.9	97	9†	67	2†	28	7.01	+ 1.21	1.65	0	13	16	5	10	se.	Elmo M. Bott.
Burnside	Ascension	20	11	80.9	− 0.2	98	9	64	16	27[a]	11.11	+ 5.60	4.00	0	19					C. S. McFarland.
Burrwood	Plaquemines	1	23	83.0	+ 0.7	94	6	68	14	17	5.85	− 2.39	1.65	0	13	10	15	6	sw.	Graham Myers.
Cades	St. Martin		1	82.2		98	9	69	31	24[a]	6.91		1.28	0	15	13	10	8	s.	C. E. Smedes.
Calhoun	Ouachita	180	23	80.3	− 0.6	100	9†	57	31	30	4.58	+ 1.30	1.18	0	12	9	12	10		North Louisiana Expt. Sta.
Cameron	Cameron	6	18	81.0	− 0.9	93	10	70	30	20	8.93	+ 4.95	2.23	0	8	9	10	12	sw.	State Biological Station.
Carrollton	Orleans	7																		Loyola College.
Cheneyville	Rapides	67	23	81.6	+ 0.2	99	8†	62	31	27	9.56	+ 5.64	2.30	0	9	10	9	12	s.	Walter I. Tanner.
Cinclare	West Baton Rouge		1	81.8		98	9	67	30	27	6.33		2.07	0	15	12	17	2	sw.	Cinclare Central Factory.
Clinton	East Feliciana	113	23	79.7	− 0.5	95	1†	66	31	24	3.27	− 2.83	1.10	0	13	13	9	9	n.	John A. White.
Collinston	Morehouse	65	10	81.4	− 1.5	100	8†	60	30	30	6.72		2.65	0	14	8	10	13	s.	John B. Reily.
Covington	St. Tammany	39	19	82.2	+ 0.6	102	9	69	3†	27	7.37	+ 0.73	1.36	0	21	18	3	10	s.	Lucille Champagne.
Dodson	Winn		2	81.4		101	9	54	30	30	2.89		1.28	0	8	9	16	6	sw.	J. P. Lucas.
Donaldsonville	Ascension	33	23	81.5	0.0	98	8†	63	24	33	28.50	+22.68	6.55	0	20	20	4	7	e.	John F. Park.
Dutchtown	do										7.25		2.30	0	13	12	11	8		Picard & Geismer (Ltd.).
Farmerville	Union	177	23	79.4	− 0.4	95	7†	60	29†	24[b]	8.33	+ 5.11	1.56	0	13				s.	W. P. Chandler.
Ferriday	Concordia		4	79.6		97	9	61	30	27	6.26		1.88	0	13	19	1	11	s.	R. Z. Sclater.
Franklin	St. Mary	10	19	82.9	+ 0.6	99	8†	69	2	26	18.79	+11.25	4.54	0	22	9	14	8	s.	J. M. Bonney.
Grand Cane	De Soto	302	17	83.8	+ 2.0	101	9	49	31	38	3.02	+ 0.73	0.79	0	14	7	15	9	s.	G. Foster Provost.
Grand Coteau	St. Landry	93	23	81.6	+ 0.3	98	9	66	31	28	7.61	+ 2.77	1.02	0	14	16	13	2	sw.	St. Charles College.
Hammond	Tangipahoa	44	19	83.1	+ 1.8	99	9	60	24†	33	4.80	+ 1.05	1.70	0	12	18	12	1	se.	C. C. Carr.
Houma	Terrebonne		23	81.0	− 0.6	98	9	68	21†	29	12.27	+ 5.92	1.95	0	17	13	0	18	e.	J. M. Foote.
Jena	Catahoula			82.2		100	10	64	30	29[a]	3.75		2.34	0	7				n.	I. A. Wilbanks.
Jennings	Calcasieu	30	14	82.4	+ 0.2	100	9†	66	31	28	8.63	+ 3.41	2.26	0	12	6	18	7	sw.	J. F. Buch.
Lafayette	Lafayette	36	23	82.1	+ 0.6	99	9†	69	2†	30	7.91	+ 2.46	1.67	0	20	23	2	6	e.	J. J. Davidson.
Lake Charles	Calcasieu	22	23	80.6	− 0.9	101	9	61	20	36	8.99	+ 3.32	2.00	0	10	21	0	10	s.	George Boudreaux.
Lakeside	Cameron	9		81.6	− 1.1	98	10†	68	31	23	6.48		2.19	0	11	19	2	10	e.	L. J. Nunemacher.
La Rose (near)	La Fourche			80.4		97	9	64	20	29	8.02		3.34	0	20	15	15	1	s.	Louisiana Delta Farms Co.
Lawrence	Plaquemines	6	20	83.0	+ 0.1	100	6	68	21	29	12.31	+ 5.39	3.50	0	19	5	24	2	se.	H. C. Warmoth.
Leesville	Vernon		4																	C. M. McFarland.
Liberty Hill	Bienville		23	82.6	− 0.1	106	9	52	31	35	7.81	+ 4.75	2.85	0	10	17	5	9	s.	E. A. Crawford.
Logansport	De Soto	192	7								3.46		1.26	0	6	8	10	13	s.	Bettie M. Dennis.
Melville	St. Landry	45	23	80.3	− 1.2	97	9†	60	25	28	9.04	+ 3.96	2.03	0	17	14	9	8	se.	Charles B. McNeill.
Minden	Webster	194	23	80.5	− 1.6	104	9	54	31	33	10.70	+ 7.89	3.90	0	14	10	12	9	n.	Ethel Fort.
Monroe	Ouachita	82	23	81.8	− 0.3	102	9†	61	30	29	7.91	+ 4.38	2.77	0	11	14	0	17	e.	L. L. Smith.
Morgan City	St. Mary	14	5								13.06		4.17	0	15	14	9	8	se.	Virgil E. Kinsey.
Newellton	Tensas		4	81.2		99	8†	61	30	27	4.53		0.83	0	10					John D. Fultz.
New Iberia	Iberia	15	23	79.8	− 1.5	94	4†	69	24	22	7.47	+ 1.30	1.95	0	16	5	21	5	se.	Mrs. John A. Gebert.
New Orleans (1)	Orleans	51	40	81.8	+ 0.5	97	9	69	20	23	8.15	+ 2.54	1.99	0	14	5	18	8	sw.	U. S. Weather Bureau.
New Orleans (2)	do	18	23	82.5	+ 0.6	100	9	69	3†	26	8.85	+ 2.94	1.71	0	20	1	9	21	s.	Sugar Experiment Station.
Opelousas	St. Landry	83	19	82.7	+ 0.8	100	10	65	31	29	6.07	+ 0.98	1.41	0	12	17	5	9	s.	Andrew Moresi.
Paradis	St. Charles										8.39		3.12	0	15					Louisiana Meadows Co.
Pearl River	St. Tammany	29	5								9.00		1.80	0	18	22	3	6	s.	Geo. F. Bancks.
Plain Dealing	Bossier	268	19	82.1	+ 0.7	105	9	55	31	35	3.39	+ 0.39	1.06	0	10	10	14	7	se.	Leon Sanders.
Rayne	Acadia	44	19	81.8	− 0.2	97	9	68	2†	26	6.93	+ 1.48	2.05	0	11	18	3	10	s.	A. P. McNeil.
Reserve	St. John Baptist		10	83.0	+ 1.2	102	6†	69	21†	30	6.16	+ 0.96	1.39	0	13	8	11	12		Leon Godchaux Co. (Ltd.).
Robeline	Natchitoches	147	15	81.2	− 0.2	100	9	56	31	36	4.95	+ 1.53	2.15	0	7	13	5	13	se.	Ruby McCook.
Ruston	Lincoln	312	16	81.6[a]	− 0.3	101	2	59	30	30[b]	4.03	+ 0.93	1.80	0	8					J. C. H. McKinney.
St. Francisville	West Feliciana	115	8	80.6[f]		95	7	65	1	26[f]	13.05		2.00	0	10	7	24	0	s.	L. P. Kilbourne.
Schriever	Terrebonne	17	19	81.8	− 0.3	101	9	68	10	29	14.87	+ 8.19	3.72	0	22	23	2	6	e.	Harriet F. Riveire.
Sheridan	Washington		1	81.0		99	9	66	30	28	9.56		1.70	0	14					D. A. Self.
Shreveport	Caddo	249	40	81.6	+ 0.2	102	9	62	31	26	9.75	+ 7.51	5.25	0	11	10	13	8	s.	U. S. Weather Bureau.
Simmesport	Avoyelles	42	5								2.57		0.53	0	15	4	6	21	nw.	C. T. Leigh.
Southern Univ. Farm	Jefferson		14								12.92	+ 7.93	3.87	0	19	0	3	28	se.	F. L. St. Martin.
Sugartown	Calcasieu		18	82.0	+ 0.5	96	9†	68	31	24	6.37	+ 1.29	1.68	0	7	1	30	0		G. W. Richardson.
Tallulah	Madison	91	4	80.5		99	8†	58	30	30	6.57		1.20	0	11	0	28	3		C. E. Speed.
Walker	Livingston		1	80.6		98	8	68	27	26	4.84		1.20	0	11	15	6	10	ne.	H. C. Fondren.

[a], [b], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 7, Lower Mississippi Valley.*

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Colorado.																																	
Blaine	Cimarron		1.60									T.												.70		1.10		.31					3.71
Buena Vista	Arkansas									.03	.25		.08			.10					.12	.20	.62	.10	.03							1.53
Calhan	Big Sandy																																
Canon City‖	Arkansas											T.	.31	.02			T.	T.	T.			T.	.82	.44		.16		T.	.05		T.		1.80
Colorado Springs	Fountain				T.					.01	.01	.04	.05	.05		T.	T.	T.	T.		T.	.33	.56	.01	.03	T.			T.				1.09
Cripple Creek	Oil Creek								T.		.03	.05			.18	.04		T.				.84	.64	T.	.41			T.	T.	T.			2.19
Cuchara Camps	Cucharas											T.	.11						.26	.06			.07	.38				T.					0.88
Eads	Big Sandy																																
Fairview	St. Charles														.03			.41				.21	.73	.31	2.20		.17	.60					4.66
Fremont Experiment Station.	Fountain	.01	T.	.01						.02	.15	.13	T.	.02		.07	.10	.01	T.	T.		.94	.06	.04	.45	.01			.01				2.03
Garfield	Little Arkansas.	T.	.03							.33	.03	.03	.02				.08	.24	.07	.11	.22	.08	1.37		.14			.06	.19	T.	T.	T.	3.90
Hamps	Big Sandy		.22	.31							.84						1.72				.78		.29	.06	T.	T.						4.22
Hermit Lake	Grape Creek																																
Hoehne (near)	Purgatoire			T.							.20												.33	.27	.21	.05		.05					1.11
Holly	Arkansas		.06		.80	.86												.08			.13		.12	.36			.73						3.14
La Junta	do							.50			.35						.35							.15					.10				1.45
Lake Moraine	Fountain										.07	.28	.05	.10		.14	.16					.57	.58		.42	.17			.10	.20			2.84
Lamar	Arkansas		.02		1.01													.16			.20					1.02							2.41
Las Animas	do		T.								T.	.17					.37		T.			T.	.24	.21	.13	.15		.17					1.44
La Veta Pass	Cucharas											.28					.03	.03	.03		.05	.28	.76	.21	.03	1.01	.08	.18	.04				3.01
Leadville	Arkansas		.04							.02	.41	.56	.03	T.		.01	.01	.04		.32	.15	.25	.61	.16	.05		T.	T.	T.			.23	2.89
Limon (near)	Big Sandy	.02	.04	.23	T.			T.		.03	.31	T.	T.			T.	.10	.03	.29		.43	.02	.20	.03	T.	T.		T.		T.			1.73
Madrid	Purgatoire												.04			.07						.15	.27	.18	.32		.11						1.14
Marshall Pass	Arkansas		.10								.20	.23	.13					.30					1.50										2.46
Monument	Fountain	T.			T.						.08	.31		.05		T.	.05	T.			.13	*	.65	.04	.05	T.							1.36
North Lake	Purgatoire																.10						.78	.70				.70					2.28
Pueblo	Arkansas		.02								.01	T.	.05								T.	.07	.15		.02		T.	.05					0.37
Rocky Ford (near)	do										.35	.07											T.		.10	.17							0.69
St. Elmo	Chalk Creek		.08							.10	.12	.42		.05		.05	.25	.10			.20		.87	.10	.30				.12	T.			2.76
Salida	Arkansas										.03		.20									T.	.73	.08		.10							1.14
Santa Clara	Huerfano		T.							T.	.14	.09	T.	T.	T.	T.	T.	.02	T.		T.	.35	.62	.12	.51		T.	.25	.25				2.35
Sheridan Lake	Arkansas																																
Stonewall	Purgatoire		.02								.24	.36	.23				.04	.15	.02			.12	.74	.39	.30	.02		.16	.03				2.82
Trinidad	do										.75	.39										.49	.39		.32	.26		.09					2.69
Victor	Oil Creek	T.	T.								.12	.11	.24			.18	.04	.30	.13			.67	.90		.33	.12							3.14
Vilas	Cimarron																																
Wayne	Arkansas	T.	T.		.12					T.	.15					.02					T.	.09	.28		.25			T.				0.91
Westcliffe	Grape Creek		.05									.03	.23				.03	.04	.10			.20	.52		.15			.15					1.50
Winfield	Clear Creek		.09	T.		T.			T.	.19	.20	.31	.05	.17		.23	.12			.20	.10	.26	.19	.18	.18	T.	T.	T.	T.	T.	T.	.05	2.52
Woodman Sanatorium.	Fountain		T.		T.					T.	.05	.29	.07	T.		T.	T.		.25			.36	.48	.18	.09	.10							1.87
Wortman	Arkansas								T.	T.	.50	.12			T.	T.	.30	.20	.40	.10	.20	.10	T.	T.		T.		.13	.21	.10		T.	2.36
New Mexico.																																	
Abbott	Canadian																.18					.18	.10	.45	.75	.30	.06						2.02
Albert	do																						.24	1.20	.50	.55							2.49
Aurora	do										.02	.03	.04			.04	.05	.24		.05	.10	.13	.64	.54		.15		.35	.30	.02			2.70
Bell Ranch	do																						.20	.68		.38	.04	.08	.05				1.43
Black Lake	do										.40	T.	.01						.06			.38	.67	.03		.28		.46					2.29
Cabeza	do																						T.	1.10	.65	.25							2.00
Campana	do																						.16	.50	.80	.05		.11					1.62
Chacon	do											.15							.90	.08			.80	.37	.38			.24		.05			2.97
Cimarron (near)	do										.05	T.	.01	.17		.03		.56	.05			.90	.77	.49	T.	.07		.18	T.				3.28
Clayton	do		T.										T.	T.			T.					T.	.55	.91	T.	.76			.81				3.03
Clovis	Red																	T.					*	.53	1.70								2.23
Cuervo	Canadian													.05					.13				.04	.98	T.	.67		.09	.32				2.28
Dawson	do											.30						.05			.30	.60						.20					1.45
Elizabethtown	do									.05								1.14	.06			.22	.90	.38	.14	.39				.02			3.30
Folsom	Dry Cimarron.		.14	.14	.03									.06			.31	T.		T.		.50	.46	.30	T.	.21		.20					2.35
Fort Union	Canadian				*													.55	.25	T.	T.	.15	.40	.21	.60			.20					2.36
Hayden	do	.12				T.								T.	T.			.17					.70	.80	.02	.40	.03		.03				2.27
Hoosier Ranch	do		T.														T.					.60	1.30		.50	.31		.76					3.47
Johnson Park	do													.20		T.						1.30	.70		T.	.20		.08	.10				2.58
Kappus	do																						1.60			.50		.15					2.25
Lake Alice	do		.13	.10												.55	.10				.14	.47	.48		.21	.38		.05					2.61
Logan	do																						.27	1.83		1.10			.70				3.90
Los Alamos	do																																
Lykins (near)	Red																		.10				.44	.55	.53								1.62
Maxwell (near)	Canadian				.13						.02						.07	.81				.37	.48		.08	.50		.26					2.72
Melrose	Red																.06							.55		1.59							2.20
Miami Ranch	Canadian													.04				.01				1.46	.14	.28	.02			.02					1.97
Montoya	do																							1.51	.95				.71				3.17
Mount Dora (near)	do			.15										T.							.65	1.00				.46	.05						2.31
Nara Visa	do	.37																					.13	1.69	.13				.25				2.57
Ocate	do										T.	T.	T.						T.		.45		.49	T.	T.		T.	.59	.19				1.72
Optimo	do																																
Palo Verde	do																					.50	1.00		.90	.10	.45						2.95
Pasamonte	do																						.37	1.10	.26								1.73
Pleasant View	do														.06								.54	1.32	.22		.45	.40					2.99
Portales	Red																																
Raton	Canadian		T.	T.								T.	.01	T.		.03	.01	.75	T.		.33	T.	.39	.41	.09	.43		.04					2.49
Rociada	do														.07		.03	.06					.77	.54	.02			.35	.53				2.37
Rosebud	do	.06																					.97	.05		1.86			.05				2.99
Roy	do	.03		.24																		T.	.53	1.00	.76	.45		.43					3.44
San Jon	do	T.																				T.	.03	3.96		1.61	.01		.23				5.84
Solano	do	.09		.03																		T.	.96	1.10	T.	1.10	.39		.35				4.02
Springer	do														T.	.20						.20	.50	.30	T.	.06	T.	.90	.10				2.26
Taylor	do																						.37	.34	.35		.10	.35					1.51
Trementina	do																																
Tucumcari	do																						.25	2.30	*	2.12		*	.34				5.01
Valley	Dry Cim'n			T.																		.51	T.	.60									1.11
Vance	Canadian	.05		.19		T.												.02				.12	.57	1.12		1.12	T.		T.				3.19
Vermejo Park	do														T.	T.		.18				T.	1.00	.30				.10				1.58
Wagon Mound (near)	do											T.		.02				T.	.10			.06	.51	.24	.50	.16		.51	.08				2.18

TABLE 2.—*Daily precipitation for August, 1911. District No. 7*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas.																															
Amarillo	Canadian	.20																				.07	.66	2.02				T.	.02				2.97
Archer City	Red		T.	.19	.02							T.						T.							.02			1.62	2.74				4.59
Arthur City ‖	do		.10															.15		.03						.02	.01		2.00	.02			2.33
Bonham	do	.25			.27																		.90					.16	2.25				3.83
Canadian	Canadian																							*	1.25								1.25
Childress	Red		.95																					.70	.30			.40					2.35
Chillicothe	do				.22																				2.37			.78	.04				3.41
Clarendon ‖	do	.08	.44	.23																				22	.23				.89				2.09
Clarksville	do																		1.75								.50		1.30				3.55
Claude	do	.33																						1.30	.27				1.00				2.90
Dalhart ‖	Canadian	.05	.03																				.38	1.20		.08			.18				1.92
Denison ‖	Red	.06	.04	.20		.40							.04						.50	.10				.60	.60	.06			1.64	.20			4.44
Finley ‖	do																			.20						.16							0.36
Henrietta ‖	do	.06			.38	.28													.05					T.	T.	.16		.10	2.50	.13			3.66
Hereford	do																																
Lewis Ferry ‖	do	.25	T.																	1.25	T.								1.00				2.50
Memphis	do	.50	.15	.10																				.15				T.	.85				1.75
Miami	Canadian	.06	.19		.05																		T.	2.00	.02								2.31
Mobeetie ‖	Red																							1.70	T.				T.				1.70
Nazareth	do																																
Ochiltree	Canadian	.32		.70																		.28	1.03	1.20					.10				3.63
Pampa	do																																
Panhandle	do																																
Paris ‖	Red	T.	.04			.08											T.	T.	.10		T.			.04	T.	.96	.49	.24	.84	1.41			4.20
Plemons	Canadian	.51	.44																				.34	1.01					.15				2.45
Quanah ‖	Red		T.	T.	T.																			T.		.25			1.35	T.			1.60
Ringo Crossing ‖	do	.46																		.36									.42	1.18			2.42
Romero	Canadian	.11		.30	T.																		T.	1.58		.13			.40				2.52
Sherman ‖	Red	.18	.15		.12	.93												.17			.10			T.	2.45	.06			2.60	.06			6.82
Stratford	Canadian	.29			.09									.10									2.10	.90					.03				3.51
Sulphur Springs	Red																																
Texline	Canadian																						1.60										1.60
Tulia	Red	.03	.02																				.02	.85					.40				1.32
Wichita Falls	do			.13	.30								.05											.10	.09		.25	.55	.40				1.87
Winfield	do	.07										T.					.44		T.						.34				.20	.30			1.35
Kansas.																																	
Alden	Arkansas	.33	.99			.19																		.10									1.61
Anthony	do	.37		.96	.09	1.94												T.				T.	.04	.52	.10			.39					4.41
Ashland	Cimarron			.94	.20	2.55												T.				.20	.76	.02			1.65					6.32
Burlington	Neosho			1.00	1.51																	.35	T.					.49					3.35
Chanute	do	T.		.67	5.30	.38																	T.	T.									6.35
Coldwater	Cimarron	.21	T.	1.14	1.81	1.35																	.13	.53	T.			.30					5.47
Columbus	Neosho	.04		.63	3.12	.16								.01				.02				.72	2.00	T.	.04								6.74
Coolidge	Arkansas		.09	1.12	.70																			.67		.20							2.78
Cottonwood Falls	Neosho	.39		1.08	.93	.02														.02				.03	.01			1.69	.19				4.36
Council Grove	do	.01		1.09	T.															.21	.37	1.35		.08					.53				3.64
Cunningham	Arkansas	.10		2.90		.65														T.				T.				1.00					4.65
Dodge City	do	.10	.78	.05		.87																	T.	.29					.12				2.21
El Dorado	do	.23		1.92	.36	.32												.40				T.		.02					.42				3.67
Ellinwood	do	.52		.52		1.21																		.13				T.	.12				2.50
Emporia	Neosho	.53		1.06	.13												T.					.25		.09				.84	.21				3.11
Eureka	Verdigris				.80	.50																.55						.28					2.13
Fall River	do	.15		.75	.65	.70																.65		T.	.15								3.05
Fargo	Cimarron	.41		1.70	.72	1.83																		1.50					T.				6.16
Fredonia	Verdigris	.01		.69	1.98	.35																.16	T	T.	T.								3.19
Garden City	Arkansas	T.	T.	.44	T.	.57	T.											.05		.08	T.		.10	.30	T.		.35	T.					1.89
Great Bend ‖	do	.36		.47		2.70																			.12				.12				3.77
Greensburg	do	.27		1.85	T.	1.03																		.50				.15	.18				3.98
Grenola	Verdigris	.22		1.32	.30	.41																	T.	T.	.03								2.28
Hess	Cimarron																																
Howard	Verdigris	.05		2.00	.23	.45																	T.	T.									2.73
Hugoton	Cimarron		.41	.59	.40	.05																	.38	.79					.11				2.73
Hutchinson	Arkansas	.46		1.32		.15																		.06				.30					2.29
Independence	Verdigris	.01		.72	1.75	.24																	.27	T.	.05								3.04
Iola	Neosho			.68	2.74	.17										T.						.16		.04	.06			T.					3.85
Irene	Arkansas	.04	.33	1.18		.27	.01					T.		T.			T.			T.	T.			.60			.30		.30				3.03
Jetmore	do	.14	.07	.14		.99												T.					T.	.27									1.61
Kingman	do	.18		2.51		.48																		T.				.26	.24				3.67
La Crosse	do	.38		.10		1.45												T.		.92			.04	.07				.25	.17				3.38
Lakin	do		.06		.60													T.			T.		.40			.42							1.48
Larned	do	.07	.10	.29		1.06	T.													T.	.03	T.		.18	T.			.05					1.78
Lebo	Neosho	T.		1.14	.94	T.														T.	T.	1.46		.06				.44					4.04
Le Roy ‖	do																																
Liberal	Cimarron	T.	.04	.44	1.10	.45												T.					.46	.72					T.				3.21
Macksville ‖	Arkansas	.65		.68		1.11															T.			T.	.13				.32				2.89
McPherson ‖	do	.04		1.88		.04																T.			.06				.19				2.21
Madison	Verdigris	.08		1.05	1.55	.06																.23		.05				1.69					4.70
Marion	Neosho	.87		1.63	.03	T.																		.10				.31	.09				3.03
Medicine Lodge	Arkansas	.18		.87	.15	1.10												T.					.03	.32				.63					3.28
Medora ‖	do	T.		1.43	.05																T.		T.	.08					.13				1.69
Mount Hope	do	.43		2.14		.23																		T.				.70					3.50
Neosho Rapids ‖	Neosho	T.		1.43	.05																T.		T.	.08					.13				1.69
Ness City	Arkansas																																
Newton	do	.42		1.63		.09																		.09				.80					3.03
Norwich	do	1.25		.99	.15	.70												.12				.08	T.	.08	.11			T.	.30				3.78
Oswego	Neosho			.69	2.80	.19																	1.48	.05									5.21
Plains	Cimarron			.42	.44	2.30																		.80			T.	T						3.96
Pratt	Arkansas	.23	.42	.46	.22	.81	.16																	T.	T.			1.17					3.47
Richfield	Cimarron			.42	.47									.15										.88				.05	.08				2.05
Rome	Arkansas	.50		1.35	.34	.78																		.05	.03								2.95
Sedan ‖	Verdigris	.19	.09	1.43	.32	.70	.26																.04	T.	T.								3.03
Toronto ‖	do	.05		1.05	2.95	.06	.45																.45		T.								5.01
Ulysses	Cimarron	.26	.13	.90	.01	1.87															T.		T.	.65		.27		.14					4.23
Walnut	Neosho	T.		.30	1.25	.19												T.					.45	T.									2.19
Wellington	Arkansas	.42		1.22	.13	.75																	T.	.04									2.56
Wichita	do	.97			2.87	T.	.38											T.				T.	T.	.05				.05					4.32
Winfield	do	1.58		1.25	.25	.58																.10											3.76
Yates Center	Verdigris			.98	2.79	.36																.08	T.	.02									4.23

TABLE 2.—*Daily precipitation for August, 1911. District No. 7*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oklahoma.																																	
Ada	Canadian	.05			.78												T.								.73			.89	1.41				3.86
Alva	Arkansas			.60	1.10	2.80																T.	.60	.97	.20				.60			6.87
Apache	Red			.02	.45																				.40	T.		.09	.15				1.11
Arapaho	Washita		.03	.09	.86	.01																						1.40	1.24				3.63
Ardmore ‖	Red	.17			.22	.32												.03	.15							1.95		2.70	1.95	.10			7.59
Arnett	Canadian		T.	.03	.66																		.50	.90	.10			.33					2.52
Bartlesville	Arkansas	.01		1.35	.53	1.45																	.09		.40								3.83
Beaver	Canadian		.08	.84		.06										.15							1.26	.72				.15					3.26
Blackburn	Arkansas	1.57		1.63	2.58	1.57																			1.17			.71					9.23
Cache	Red				1.52																				.50			.36					2.28
Calvin	Canadian	.21			.22	.12						22								.09						.92		.78	1.20				3.76
Chandler ‖	do			.91	.21	T.																	T.		.80	.12			.93				2.97
Chattanooga	Red			.32	.20																				1.20			.20	.53				2.45
Chickasha	Washita			.12	.59	.04														.20							.07	T.	.50				1.52
Cloud Chief	do	T.	T.	1.14	T.							.08												T.	T.			T.	.75				1.97
Durant ‖	Red	.14	.25	.06	.02	.26												T.	.24	T.			T.	.34	.64	.17			1.65	.27			4.04
Eldorado	do	T.	T.	.08	.07																		T.	T.	.29			1.65	.07				2.16
Elk City	do																							.03	.03			.30					
El Reno	Canadian			.13	.91																			.75	.15			.40	.05				2.39
Enid ‖	Cimarron	.10		1.05	1.52	1.10	.20																.42	.15	.45								4.99
Erick	Red	.06	.10	T.	T.																			T.	T.			T.	1.53				1.69
Fairland	Arkansas			.75	1.57	.30								11								.07			1.06								3.86
Fort Gibson	do	.05		1.60	.56	.19	1.53																T.	T.	.92	.62			.56				6.03
Frederick	Red			.06	.75																			.05	1.38			1.77	.26				4.27
Goodwell	Canadian	.45			.77																		.46	.72	.02				.17				2.59
Guthrie	Cimarron			.25	1.25	.35																		.20	1.05			.40					3.50
Guymon	Canadian																																
Harrington	Red		.03	.04	.57																			.58	.02								1.24
Hartshorne	Canadian	.19		.08	.13	.24														.02								2.55	.53				3.74
Healdton	Red			.33	.46							T.							25						2.85			5.05	1.11				10.05
Helena	Cimarron			.90	2.58	1.10																	.40	.80	.05								5.83
Hennessey	do			.10	.75	1.14																		.04	.54			T.					2.57
Hobart	Red		.01	.64	1.42																		T.		.07			.05	.13				2.32
Holdenville ‖	Canadian	.18			.27	.26						.06								.19						.22		1.82	.92				3.92
Hooker	do		.25	.14	.82													T.					.78	.75									2.74
Hurley	Cimarron				.12	.10																	.97	.93									2.12
Idabel	Red	1.00															.60						T.		.03	.01			2.06	T.			3.70
Jefferson	Arkansas	.73		.77	1.00	1.24																	.15	.42	.14			.04					4.49
Kenton	Cimarron	T.			T.												T.	T.					.30	.64	T.	.12		.02					1.08
Kingfisher	do			.06	1.20	.11																	.05	.38	.52			1.11					3.43
McAlester	Canadian			.22	.11	.10						.43					.03	.07							.94			2.55	.57				5.02
McComb	do																																
Mangum ‖	Red				.16																							.20					0.36
Marlow ‖	Washita																																
May	Canadian			.17	.97	1.48																T.	.80	.97	.05			T.					4.44
Meeker	do			.66																									.60				1.26
Muskogee	Arkansas			2.00	.25	1.45												2.00							1.31			.61					7.62
Mutual	Canadian				1.33	.19																	.30		2.00			.12					3.94
Neola	Washita		T.	.05	.50	T.						T.													.04			.19					0.78
Newkirk	Arkansas	3.30		1.05	.85	2.07																		T.	.35								7.62
Norman	Canadian		T.	.28	.32	T.	T.					T.								T.				T.	.02				.90				1.52
Oakwood	do		T.	.02	2.01	.15																	.23	.21	.07			.14					2.83
Okeene	Cimarron		.02	.12	.71	1.25																	.28	.50	.42								3.30
Oklahoma	Canadian			.13	.50	.02												T.						.01	.10			.10	.08				0.94
Okmulgee	do	.59		1.76	.38	1.05																			1.23			1.70					6.71
Pauls Valley	Washita																																
Pawhuska	Arkansas	.10		.93	.40	1.22																		.09				.26					3.00
Perry	do	.12		1.70	1.83	1.53																	.04	.01	.45			.10					5.78
Ravia	Washita				.20								.18										.12	.11	1.15			1.73	.98				4.47
Sac and Fox Agency	Canadian																																
Shawnee ‖	do	.10		.04	.52	.02	.08													T.				T.	.33	.02		.35	1.51				2.97
Snyder	Red		T.	.13	.33																							T.	.22				0.68
Stillwater ‖	Cimarron		.10	1.44	2.31	1.43	.48																T.	T.	1.62	.04			.23				7.65
Tulsa ‖	Arkansas	.84	T.	1.82	1.05	.21	1.38																.02	T.	2.23	.02			.33				7.90
Vinita	do			1.22	2.51	.90																			.93								5.56
Wagoner	do	.01		2.05	.26	1.75																			2.62			.47					7.16
Waukomis	Cimarron	T.		.48	1.17	1.60																	.32	.33	.25								4.15
Waurika	Red			.15	.68													.67							.35			.76	.83				3.44
Weatherford ‖	Canadian	.24		.06	1.16	.02							T.												.08	T.			.57				2.13
Webbers Falls	Arkansas	.25	.15		1.95	.10	.55					T.						T.					T.		.70				.80	.10			4.60
Whiteagle	do	1.50		1.25	1.53	1.64																	.13	.06									6.11
Woodward	Canadian			.08	.66	1.23																.24	.79	.88	.10			1.29	.02				5.29
Missouri.																																	
Belle	Meramec				.05	.60		.20				T.					T.	.20		1.90			.70		.75								4.40
Birchtree	Black	.60					1.90								4.93	.20				.68	.06	.17	.49		.54								9.57
Cardwell	Mississippi	.10			.28	1.95	.05							.37	.18	.77		.08		1.20				.28		2.20	3.52	.38					11.36
Cape Girardeau ‖	do																																
Caruthersville	do	.10			.08	.85	.11	T.		.10				.55	.22	.05		.10		T.	.41	T.	.09		T.	1.40	.64	T.	.03				4.73
Cassville	White			.74	.73	.26																13	1.72	.06	1.19	.01		.05					4.89
Dean	Neosho	.04		.85	2.49	.49	.04																.15	.05	1.36								5.47
Doniphan	Black				.25	.10	1.02							.10	1.25	.59		.26		T.		T.	.30	T.	1.50		.15	T.					5.52
Gano	Meramec				.18			.06						T.	.14					1.30		.11	T.	.18	1.52								3.49
Goodland	Black	.05						.35						.14	.15					.65	.14	.05		.14	1.18								2.85
Greenville	Mississippi	1.20			1.12	T.	T.								1.80					.20	.22	.05	.08	.30	1.26	.50			.14				6.87
Hollister	White	.10		.15	.60	1.30	.65								.60							.90	2.10	2.15	.95								9.50
Ironton ‖	Mississippi	T.	1.35			.04	.05		.35						.08	T.				T.	1.23		.08	T.	.42	.45			.05				4.95
Jackson	do	.72		.45	.15		.08	.16	.95					.01	.11			.08		.33		.10			1.20			.64					4.98
Joplin	Neosho			.63	4.00	.14																.60	.69		1.22								7.28
Koshkonong	Black	.04				.30	1.29							.14	3.70	1.17		.17		T.	.50	.11	.70	.07	.83	.01	T.	.11					9.14
Lamar ‖	Neosho	.46		.33	1.98	.42	.08															2.00	3.50	.12	.06								8.95
Marble Hill	Mississippi					.92		.08		.05					.25					.17		.10			.80			.40					2.77
Mountaingrove	White				.57	T.	.20							T.	1.90					1.30		.15	T.	.50	1.24								5.86
Mount Vernon	Neosho			.42	2.50	.15	.03															2.75	4.00	.70	1.46				.03				12.04
Neosho	do			.65	5.17	.24	.02							.04									T.	.22	T.	2.68	.02						9.04
New Madrid ‖	Mississippi	.04	.06			.50	.10		.10	.30					.42	.13				T.		.15					1.20		.54	.82			4.36
Oakfield	Meramec	.06		T.				.63	.09						T.					.95		.13		.14	1.82								3.82
Olden	White	.12					2.22							.06	4.56	.49				.77		.07	.83		.55			.30	.03				9.99
Rolla	Meramec				.09	T.	.05								.02					.36		.13	T.	.39	1.05								2.09
Springfield	White			.14	1.28	.05	.01							.20	T.							1.12	.50	1.92	.88			.55	.27				6.92
Steelville	Meramec			T.	.02										T.		T.			1.50		.59	.21	T.	1.64	.04							4.09

TABLE 2.—*Daily precipitation for August, 1911. District No. 7*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Kentucky.																																	
Bleadville	Mississippi	.37	.03	....	.05	...	.05	....	.82	....	....	....	....	....	.46	....	....	....	.11	....	....	T.	.07	.38	.01	.60	.19	.05	.66	....	....	....	3.85
Lynnville	do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Tennessee.																																	
Arlington []	Mississippi	1.22	T.	....	....	T.	.35	.18	T.	....	....	....	....	.20	.15	.20	....	T.	.47	.73	.30	....	....	....	....	.30	.31	.26	.55	....	....	....	5.22
Bolivar []	do	.82	.04	....	....	....	.16	.85	....	....	....	....	....	T.	.12	.28	.10	....	T.	.18	.45	....	.10	.11	....	....	.75	.39	.92	T.	....	....	5.27
Brownsville []	do	.10	....	....	.36	.07	.64	....	....	....	....	....	....	T.	.03	.96	T.	....	.26	....	.60	....	T.	.15	....	.30	1.15	.46	.08	....	....	....	5.16
Covington []	do	1.60	....	....	....	.50	.40	....	T.	....	....	....	....	.45	.40	.31	....	....	....	....	.41	....	....	....	....	.10	.40	.45	.50	....	....	....	5.52
Dyersburg []	do	.35	....	....	....	....	.62	....	....	T.	....	....	....	T.	.20	....	.10	....	....	....	1.00	....	.10	....	....	.60	.10	T.	....	....	....	....	3.07
Jackson	do	.32	....	....	.06	....	3.06	....	....	....	....	....	....	.45	1.70	.10	....	.98	....	....	....	....	.61	....	....	.55	1.06	.35	....	....	....	....	9.24
Kenton	do	.25	.24	....	.34	.20	.19	.04	....	.05	....	....	1.40	.93	.14	....	....	....	.12	....	.35	....	.14	....	....	.78	.14	.25	....	....	....	....	5.56
Memphis	do	.74	....	....	.10	.50	.16	....	....	....	....	.27	.23	.53	.21	T.	.03	.71	.47	1.04	T.	.09	....	T.	.46	.10	T.	....	....	....	....	....	5.64
Milan []	do	1.84	.05	....	....	1.47	.47	.39	.02	.08	....	....	.01	.40	.97	.07	....	T.	.09	1.19	....	.09	T.	....	T.	1.12	.92	T.	....	....	....	....	9.18
Trenton	do	.54	....	....	T.	.41	.51	....	....	.15	....	....	.64	.50	.48	....	....	....	.84	....	....	.38	....	....	.55	.75	T.	....	....	....	....	....	5.75
Union City	do	.07	.01	.02	.11	.07	.39	.01	....	.07	....	....	....	1.09	.14	....	.16	....	....	.40	....	.10	....	....	1.10	.30	1.46	....	....	....	....	....	5.50
Arkansas.																																	
Alicia	White	.05	T.	....	....	2.10	....	....	....	....	....	....	....	.95	2.20	1.00	.10	.75	....	*	*	....	*	....	*	*	*	2.15	....	....	....	....	9.30
Amity	Ouachita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Arkadelphia (near)	do	....	....	....	....	....	....	....	....	....	....	....	.06	.14	....	.82	.18	.66	.60	....	....	.76	.76	....	.12	.88	.50	.23	2.05	....	....	....	7.76
Arkansas City []	Mississippi	.50	.40	....	....	....	....	....	....	....	....	....	5.50	1.60	.52	.36	....	....	.70	....	....	1.04	1.56	.05	....	.55	.60	.80	.80	....	....	....	14.98
Batesville []	White	.18	1.14	....	.02	.46	.16	....	....	....	....	....	1.98	3.16	3.90	.10	....	1.50	....	....	....	.78	T.	....	.36	.34	.28	.82	.02	....	....	....	15.20
Bee Branch	Arkansas	.10	....	.30	....	1.05	....	....	....	....	....	.10	2.00	1.50	.55	T.	T.	.10	....	....	.35	2.75	....	.25	....	.35	.10	T.	....	....	....	....	9.50
Benton	Ouachita	....	....	....	....	....	....	....	....	....	....	....	.95	.55	.35	.55	....	....	....	....	....	1.75	.25	....	.38	.13	....	....	.57	....	....	....	5.48
Bentonville	Arkansas	T.	....	.64	.81	.45	....	....	....	....	....	....	.01	.01	....	.05	....	....	....	....	....	.22	.12	.98	....	....	T.	....	....	....	....	....	3.29
Bergman	White	.50	....	.10	....	....	.52	....	....	....	....	....	.21	.66	T.	....	.55	....	....	....	1.37	2.00	.42	.52	....	....	.15	....	....	....	....	....	7.00
Black Rock []	do	....	.05	....	....	.79	1.14	.07	....	....	....	....	....	.92	3.26	.35	....	....	....	.71	....	.89	....	....	.85	.18	.36	....	....	....	....	....	9.57
Brinkley []	do	1.71	.33	....	.08	.32	T.	....	....	....	....	....	.71	1.15	2.38	.96	....	1.03	....	....	....	1.51	.67	....	....	.11	.09	.08	....	....	....	....	11.13
Calico Rock []	do	.25	.75	....	T.	T.	.25	....	....	....	....	....	T.	3.25	4.25	....	....	1.30	....	....	....	1.60	T.	....	.30	.10	.20	T.	.06	....	....	....	12.31
Camden []	Ouachita	....	.68	....	....	....	....	....	....	....	....	.01	.23	.04	.02	.38	....	....	.03	....	....	1.02	.48	....	.88	.26	.34	.58	.86	....	....	....	5.81
Centerpoint	Red	.23	....	....	....	....	....	....	....	....	T.	....	.20	....	.23	.30	....	....	....	....	....	.60	T.	.77	T.	T.	T.	1.20	....	....	....	....	3.53
Clarendon []	White	.88	.37	....	.07	T.	T.	....	....	....	....	....	3.05	.96	2.23	.72	....	.63	T.	....	....	1.00	.45	....	.13	.15	.16	.03	....	....	....	....	10.83
Conway	Arkansas	.61	....	.06	.49	1.02	.09	....	....	....	....	T.	1.24	.20	.97	.12	.34	.12	....	.27	3.10	.06	....	.52	.01	.23	.12	.01	....	....	....	....	9.58
Corning	White	T.	T.	....	.04	.19	.73	....	....	....	....	....	.07	.52	1.25	....	.04	....	.05	....	....	.28	....	.31	.51	.31	.13	....	....	....	....	....	4.43
Dardanelle []	Arkansas	.95	.93	....	.06	....	.95	....	....	....	....	....	.06	1.74	....	....	....	.58	....	....	.14	.78	.12	....	.14	.62	....	.21	.10	....	....	....	7.38
Dodd City	White	....	.75	.30	....	2.47	1.00	....	....	....	....	....	....	....	5.12	.37	1.00	....	....	....	1.72	5.65	.30	.70	....	.06	....	.10	....	....	....	....	19.54
Dutton	do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Eldorado []	Ouachita	.18	.76	T.	....	....	....	....	....	....	....	....	T.	2.05	.52	.89	....	....	1.05	....	T.	1.96	.46	....	T.	.06	1.01	.54	.55	.01	....	....	10.04
England []	Arkansas	.34	T.	.40	....	....	....	....	....	....	....	....	.58	.92	.82	.45	.15	.03	.10	....	....	1.85	.55	....	.20	.05	....	1.35	.04	....	....	....	7.83
Eureka Springs	White	.51	....	.78	.36	.23	....	....	....	....	....	....	T.	.26	....	....	....	....	....	....	1.40	1.78	.60	1.16	T.	....	....	....	....	....	....	....	....	7.08
Fayetteville	do	....	....	.92	1.25	.46	....	....	....	....	....	....	.02	....	....	....	....	....	....	....	....	.12	.07	1.01	.03	.01	....	.08	....	....	....	....	....	3.97
Fordyce	Ouachita	1.16	....	....	....	....	....	....	....	....	....	.31	.23	.48	2.80	2.13	.03	....	.03	....	....	.59	....	.08	1.25	1.23	.24	.34	....	....	....	....	....	11.41
Fort Smith	Arkansas	.03	....	.59	T.	.16	....	....	....	....	....	....	.30	....	....	.01	T.	.79	....	....	....	2.65	.17	.78	....	T.	.54	.23	....	....	....	....	....	6.25
Fulton []	Red	.04	....	....	....	....	....	....	....	....	....	....	....	....	....	.84	.36	....	.16	.36	....	1.06	.15	....	.27	.07	....	.10	.09	....	....	....	3.50
Hardy	White	.95	....	T.	....	.35	1.59	....	....	....	....	....	.90	5.80	3.91	.06	....	....	T.	.15	....	1.14	.14	.36	....	.15	....	T.	....	....	....	....	15.50
Helena []	Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Hot Springs	Ouachita	.50	....	....	....	....	....	....	....	....	T.	....	T.	.10	.20	.70	....	T.	.70	....	.10	....	.90	....	.40	....	....	.80	.80	....	....	....	5.20
Huttig	do	.18	....	....	....	....	....	....	....	....	....	....	.18	....	3.80	.65	....	....	.31	.48	....	1.32	....	....	....	1.33	....	.32	.08	....	....	....	8.65
Jonesboro	White	....	....	.25	.27	1.00	.06	....	....	....	....	....	....	.85	1.40	1.60	....	....	....	.50	.35	....	.45	....	.40	.60	.23	.04	....	....	....	....	8.00
Junction	Ouachita	....	T.	....	....	....	....	....	....	....	T.	....	....	T.	1.13	....	....	T.	1.56	....	T.	1.20	.21	....	....	....	T.	.89	.47	....	....	....	5.46
Lake Farm	Arkansas	1.20	....	.31	....	....	....	....	....	....	....	.45	1.20	1.20	.50	....	....	.20	....	.50	1.52	....	....	1.10	.21	....	....	....	....	....	....	....	8.39
Lewisville	Red	.50	....	....	....	....	....	....	....	....	....	T.	....	....	T.	T.	.25	.10	....	....	.32	1.50	*	*	*	1.26	.56	.21	....	....	....	....	4.70
Little Rock	Arkansas	.23	....	.01	....	T.	....	....	....	....	....	....	.36	2.09	.72	.67	T.	T.	.16	....	T.	1.27	1.72	....	.26	.02	.52	.77	.08	....	....	....	8.88
Lutherville	do	.03	.01	.39	....	.04	....	....	....	....	....	....	.19	.41	1.06	....	....	.18	....	....	.43	1.60	.66	.23	.18	.01	.28	.22	....	....	....	....	5.92
Malvern []	Ouachita	.42	.50	....	T.	....	....	....	....	....	....	....	.33	.40	.21	.60	....	.25	.35	....	....	.30	.83	....	.15	.10	....	T.	.23	....	....	....	4.67
Mammoth Spring	White	.27	....	....	.02	.74	1.43	....	....	....	....	....	.19	3.75	.55	....	....	....	....	....	.18	.71	....	.98	.02	.02	....	....	....	....	....	....	....	8.86
Marked Tree []	St. Francis	1.19	....	....	.11	.39	1.28	.18	....	....	....	....	.22	.76	2.24	.20	.32	....	....	.36	.32	.31	.06	.10	....	....	....	1.45	....	....	....	....	9.49
Mena	Ouachita	.69	....	....	....	....	....	....	....	....	....	1.05	.09	....	.30	.07	.01	....	....	....	....	.41	.08	.85	....	....	1.27	4.44	....	....	....	....	....	9.26
Newport []	White	.02	.80	....	.06	.45	1.85	....	....	....	....	....	.30	1.50	2.06	.43	....	.05	....	....	....	.53	.13	....	.99	....	.70	.10	....	....	....	....	9.97
Ozark	Arkansas	T.	.30	1.03	T.	....	....	....	....	....	....	....	....	....	T.	....	.26	....	.22	....	....	1.04	.63	.76	T.	.03	.34	.37	....	....	....	....	4.98
Pine Bluff []	do	....	.60	....	.10	....	....	....	....	....	....	....	.40	1.40	.60	1.10	.02	....	.25	....	....	2.30	.74	....	.40	.02	....	.04	.34	....	....	....	8.31
Pocahontas	White	.20	....	....	.30	.20	.68	....	....	....	....	....	.05	1.98	2.60	....	.22	....	.66	.64	....	.75	.07	.82	.60	.90	....	....	....	....	....	....	10.67
Pond	Arkansas	....	....	1.03	.81	.45	....	....	....	....	....	....	T.	....	....	....	T.	....	....	....	....	.30	T.	1.27	....	....	....	....	....	....	....	....	....	3.86
Portland []	Ouachita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....
Prescott []	do	.02	.01	....	....	....	....	....	....	....	....	....	.02	.07	.02	....	.28	.16	.75	1.73	....	.33	.49	.02	.83	.27	.02	.05	.43	....	....	....	5.50
Rogers	Arkansas	....	....	.90	.45	.22	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20	.10	1.15	....	....	T.	....	....	....	....	....	....	3.02
Springbank []	Red	....	.24	....	....	....	....	....	....	....	....	....	....	.07	....	.05	2.08	.19	T.	.03	.10	.31	....	T.	....	1.60	.40	....	.08	.01	.02	....	5.18
Stuttgart	Arkansas	.45	....	.03	....	....	....	....	....	....	....	....	.04	4.70	.59	1.67	....	....	.03	....	1.37	2.25	....	....	.25	.10	.34	.04	....	....	....	....	11.86
Subiaco	do	.10	T.	.28	....	.07	....	....	....	....	....	....	....	.43	.05	....	.07	2.10	....	.18	....	2.27	.02	.35	.03	....	.17	.53	....	....	....	....	6.65
Swan	White	.39	....	.16	.07	.05	T.	....	....	....	....	....	.08	.70	.77	.01	....	1.00	....	....	.19	1.73	.31	1.14	....	.08	.36	.07	....	....	....	....	7.11
Texarkana []	Red	....	.20	....	....	....	....	....	....	....	....	....	....	....	....	.24	....	....	.83	.45	T.	....	T.	....	.62	.35	....	.82	....	....	....	....	3.51
Warren []	Ouachita	.60	.16	....	.02	....	....	....	....	....	....	....	.48	2.62	2.11	.20	....	....	....	....	....	1.10	.34	....	....	1.26	.75	.38	.50	....	....	....	10.52
Wattecliffs []	Red	T.	T.	....	....	....	....	....	....	....	....	....	T.	....	....	.65	.25	....	T.	....	....	T.	.70	....	2.05	T.	....	.60	.05	....	....	....	4.30
Wigs	Ouachita	.11	.12	.13	....	....	.02	....	....	....	T.	T.	T.	.84	.11	.39	.06	T.	.71	....	T.	.89	.06	.63	....	.07	.11	.47	....	....	....	....	4.72
Wynne []	St. Francis	2.30	.31	....	....	.55	....	.11	....	....	....	....	....	.40	.70	4.53	.10	.06	.90	.95	....	.32	.10	....	.08	....	.28	....	.02	....	....	....	11.71
Mississippi.																																	
Anguilla	Yazoo	.95	....	....	....	....	....	....	....	....	....	....	.50	1.50	.07	.47	T.	....	T.	....	.35	.75	....	....	....	T.	....	T.	....	....	....	....	4.59
Austin	do	1.17	....	T.	.44	.21	....	....	....	....	....	....	T.	.93	1.08	.56	.04	.58	.40	....	.07	.50	....	.10	T.	.35	T.	....	....	....	....	....	6.43
Batesville []	do	1.12	1.10	....	....	....	....	....	....	....	....	....	....	1.06	....	.31	.15	....	.05	.50	....	.22	....	.11	....	.30	....	.21	.20	....	....	....	5.33
Big Creek	do	.43	....	....	....	....	T.	T.	....	....	....	....	1.24	.30	.20	1.00	.25	....	3.00	....	.20	.40	....	....	*	*	1.44	....	....	....	....	....	8.46
Byhalia	do	1.09	T.	....	.02	.34	.25	....	....	....	....	....	.05	.35	.06	.38	....	....	.40	.10	1.05	....	T.	....	.23	1.67	.27	.17	....	....	....	....	6.43
Canton	Big Black	.25	....	....	.47	....	....	....	....	....	.02	.83	3.28	.05	.15	....	....	.17	....	.63	....	.10	....	....	....	.18	.12	.26	....	....	....	....	6.51
Charleston	Yazoo	1.45	....	....	....	....	....	....	....	....	....	....	.45	1.70	.10	....	....	....	.30	....	....	....	....	.15	....	.20	.10	.05	....	....	....	....	4.50
Clarksdale []	do	2.28	5.16	....	....	....	....	....	....	....	....	....	....	1.60	.45	.50	T.	....	.20	.28	....	.40	.14	.80	.03	....	.68	.04	.12	.47	....	....	....	13.15
Coleeville	do	1.28	....	....	....	T.	....	....	....	....	.05	1.05	....	.77	.46	.04	.06	1.12	....	.18	....	.23	....	....	.03	.22	.65	....	....	....	....	....	....	6.14
Corinth []	Mississippi	.46	.18	.02	....	.02	2.90	.46	.01	....	....	....	.04	.01	.48	.06	....	1.00	2.20	.22	....	.20	....	....	....	.74	.01	.02	....	....	....	....	9.03
Crenshaw	Yazoo	1.10	....	....	.01	T.	.03	....	....	....	....	....	.12	1.41	.11	.91	2.60	.40	.35	.06	.13	.29	....	....	.08	.50	.03	.14	....	....	....	....	8.27
Denmark	do	.48	....	....	.05	....	....	....	....	....	....	....	.15	.50	.38	.50	.13	....	2.00	....	....	.16	....	....	.47	.09	.69	.05	....	....	....	....	5.65
Duck Hill	do	....	....	....	.59	....	....	....	....	....	....	....	*	1.32	.46	.67	....	.36	T.	.55	....	....	T.	....	.97	T.	.29	....	....	....	....	....	....	5.21
Edwards	Big Black	....	....	....	....	....	....	....	....	....	.20	T.	.60	T.	.20	.30	T.	.10	T.	T.	.05	.10	.75	....	....	.20	T.	.75	.15	....	....	....	3.40
Enid	Yazoo	2.66	....	....	.03	....	....	....	....	....	....	....	.72	1.17	.08	.20	....	.15	1.20	....	.10	....	.11	....	.06	.10	.02	.97	....	....	....	....	7.57
Fayette	Mississippi	.95	....	....	....	....	....	....	....	....	T.	....	.36	....	1.60	T.	....	T.	....	T.	T.	3.01	....	....	....	.25	....	.20	....	....	....	....	6.37
Greenville []	Yazoo	.75	.38	....	....	....	....	....	....	....	....	....	....	4.64	.93	.11	.72	.06	....	.92	....	.37	1.74	1.24	....	.39	.05	.32	.58	....	....	....	13.20
Greenwood []	do	.04	.60	....	....	.41	....	....	....	....	....	....	....	4.40	.04	.18	....	.20	....	.50	....	.04	....	.20	....	T.	.26	.54	.02	....	....	....	7.43
Grenada	do	.50	....	....	.10	....	....	....	....	....	T.	.95	.91	.31	.42	....	....	.18	....	.60	....	.04	....	....	....	.59	.57	.04	....	....	....	....	5.21
Hernando []	do	.39	.11	....	....	.58	.25	.26	....	....	.12	....	....	.27	.27	.60	T.	....	T.	T.	.68	T.	.05	.02	....	T.	.84	.11	.53	....	....	....	5.08
Hickory Flat	do	.57	.04	....	....	....	....	....	....	....	....	.20	.96	.22	1.25	....	....	1.35	.05	.16	....	.13	....	....	.25	.03	.08	.03	....	....	....	....	5.32
Holly Springs []	do	.77	.36	T.	....	T.	.76	.17	....	....	....	....	....	.35	.43	1.35	.44	.07	.77	.62	.87	.02	....	.05	....	1.22	.15	.38	.03	....	....	....	8.81
Kosciusko []	Big Black	.01	.34	.01	.01	....	....	....	....	....	....	.16	1.08	.42	.62	.02	....	.82	.11	....	.32	....	....	....	....	.19	.02	.31	....	....	....	....	4.44

TABLE 2.—*Daily precipitation for August, 1911. District No. 7*—Continued.

Stations.	River basins.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Mississippi—Con.																																	
Lake Cormorant	Yazoo	.46			.16	.46	.24						.05	.24	.07	.65			.10	.19	.10		.30			.31	.50	.04					3.87
Lula	do	2.23											.16	1.00	.07	.41			.25		.10		.72			.07	.56						5.57
Malone	do	.90	.10		.05	.24	.29						.36	.18	1.45	1.46	.85		2.61	T.	.45		.07			.14	.36	.31	.07				9.89
Marks	do	2.80			.70								.50	1.90	.45	.87				1.15			.45			.30	.95	.16	.50				10.73
Natchez ‖	Mississippi	.12	.60											.06	.35	.90	T.		.41	.15	T.			1.83	T.		.54	T.		.55			5.51
New Albany	Yazoo	.27	.89	T.			.78						T.	.42	.31	.59			1.31		.10		.11			.33	.34	.13	.46				6.04
Pontotoc	do				T.	.26	.16						1.00	1.20	1.50	.26			.51	.25						.60	.20	T.	.35				6.29
Port Gibson ‖	Mississippi		.18								.06		T.	.17		.41	.04		T.	.14	.24	T.	.45	4.00		T.	T.	.10	.06	.15			6.00
Rosedale ‖	Yazoo	1.12	.55											2.10	1.40	2.00	.40			.20			.70	1.10			1.11	.35	.90	.73			12.66
Senatobia	do	1.62				.27	.06			.04		.07	.07	.39	.08	.70	.05		1.10	.08	.32		.44			.48	1.50	.43	.02				7.72
Shoccoe	Big Black	.58	.06		.14									.23	.24	T.	.13	.18	T.		.10		T.				T.		T.				3.08
Suffolk	Mississippi	.25	.02							.48			.06	.10	.52	.13		.81	.02	.03			.66	.32	.06	.01	.03	.10	.20				3.80
Swan Lake ‖	Yazoo		1.25								.15			2.45	.60					.27	T.			.15									
Tchula	do	.81								.18		T.	1.59		1.12	T.		T.	.87	.68	.55		.42			T.	T.	1.09	T.				7.31
Utica	Mississippi	.28									T.	.14	.22		.48	.10	.15	.30	.08		.40		1.05									3.20
Vicksburg	do	.33	T.			T.							.15	.12	.77	.21		.08	T.	.09	.17	.01	.67	.01		T.	.16	.06	.03				2.86
Water Valley	Yazoo	.95	T.		.06	.05							.55	.38	2.00	.85	.18	.10	1.70	T.	.80		.10			.20	.45	.80					9.17
Woodville	Mississippi	2.00									.05			.78		.28			.09	.92			.85	.24		.13			.80				6.14
Yazoo City ‖	Yazoo	T.	1.15										T.	2.89	.18	.83	.14	T.	.32	.17		T.		.63					.04	T.			6.35
Louisiana.																																	
Abbeville	Coast	.67				.01				.01	T.			.34	.22		.67	.11	.31		.35	.01	.23	.61	.01	.38	.62	.69	.02	1.74			7.00
Alexandria ‖	Red	T.	.23											.20	.53		.10		1.27		.63	.54						.35					3.85
Amite ‖	Coast	.05	1.14								.10		T.		.75	1.10	.15	.85	.80	.10	.80	.50	.10	.95	T.	.20	.30	.70	1.00	.35			9.94
Avoca Island	do																																
Baton Rouge ‖	do	T.	.60								T.			1.65	.87	.71	.12	.92	.06	.22	.10	.50	T.	.55					.40	.31		7.01
Burnside	do	.70	.15	.07						.58		.37		4.00	.20	.50	.07	.40	.25	.25	1.31		.15	.27	.20	1.32			.07	.25			11.11
Burrwood	do	.35	1.65	.40								.26	1.20	.60			.29	.44			.06		.09		.35		.14				.02		5.85
Cades	do	1.04				.40					.37	T.		.50	.13	.10		.27	.51		.08	T.	.58	.15	T.	1.08	.05	T.	1.28	.36			6.91
Calhoun	Ouachita		.63	.55									.09	.31	.56	1.18	.08	T.		T.	.10		.13	T.		T.	.72	.18	.05				4.58
Cameron	Coast										.73		T.	1.31	.13			1.96	2.23							52	1.27	.78					8.93
Carrollton	do																																
Cheneyville ‖	Red		.26												.85		1.91	2.30			.31		.80	.35				.78		2.30		9.56
Cinclare	Coast	.44					.19						1.57	.50	.21	.03	.05	.45	.50	.02	.38		1.12				T.	.02	.55	.30			6.33
Clinton ‖	do		.14	.09							.42		.03	1.10	.53		T.		.04	.03	.13			.65		.01	.02		T.	.13			3.27
Collinston	Ouachita	.65											.06	.06	.63	2.65	.16		.36	.08	.72	T.	.12	.02		T.	.18	.48	.55				6.72
Covington ‖	Coast		.18	.06		.24	.76				.23		.06	1.36	.57	.35	1.04	.42	.25	.36	.05	.09	.24	.30	.22	.45	.06	T.		.08			7.37
Dodson	Red	.08												.65	.23	1.28	.19		.10		.19		.17				T.						2.89
Donaldsonville ‖	Coast		6.55		.15	.10				2.00		.50	6.15	2.00		2.65	.33	.35	.50	.25	.45	2.05		1.00	.45	T.	1.42	.05	.90		.65		28.50
Dutchtown	do				.24					.25				2.30	.44	T.	T.	.95	.12	.42	1.30	.31	.18	.17	T.	.47	T.	T.	.10	T.				7.25
Farmerville ‖	Ouachita	.82											.13	.62	.67	.91			.55	1.07	.40	.12				1.56	.35	.35	.78					8.33
Ferriday	do	.27						.70			.18			.08	.60	.18			1.88	.10			.33	.40			.15	.34	1.55					6.26
Franklin ‖	Coast	.18	.56	.05	.01	T.					.35			2.62	4.54	.01	.07	.23	.18	1.23	.45	1.95		2.58	.11	.05	.50	.45	1.80	.38	.49			18.79
Grand Cane ‖	Red		.15										.79	.17	.24	.26	.36	.17	.01	.07				.02				.07	.04	.59	.08		3.02
Grand Coteau	Coast	.75								.15		.28		1.02	.15	1.02		.72		.35			.55	.72		.35	.58	.65	.32				7.61
Hammond	do	.18	.30							.35				.67		1.70		.10		.50	.17		.13				.10	.50	.10				4.80
Houma	do	.20		1.01						1.09			.60	.40	.11	.64	1.94	1.74	.14	.34	1.95		.29		.26			.27	1.25			.04	12.27
Jena	Red	.10												.15	.21	2.34		.20			.22								.53				3.75
Jennings ‖	Coast		2.26								.99				.43	.03			.08	1.51		.52		1.68			.29		1.08	.05	.61		8.63
Lafayette ‖	do	.05	.22				.34	.01			.55	.30		.04	.05	.84	.56	.05	.08			1.00		1.67	.10		1.20	.33	.41	.06	.05		7.91
Lake Charles ‖	do		1.00												1.31	1.28	.20		.39	1.04		.77		.10			2.00	.90					8.99
Lakeside	do									.21	.34			1.88	.54		.14				.30		14	2.05		.28	.48	.12					6.48
La Rose (near)	do	.09	.28	.05	.20					.42			.10	3.34	.36	.15		.10	.22	.25	.30		.46	.08	.84	.12	.16		.22	.28			8.02
Lawrence ‖	do	.13	.05	.05	.29	3.50					.20		.11	2.05	.90	.30	1.25	.05	.07	.04	.43	.60		1.81	.26	.22							12.31
Leesville	Sabine																																
Liberty Hill	Red	.05		T.									T.		.15	2.65		.17		.10	T.		.28				.31	.85	2.85	.40			7.81
Logansport ‖	Sabine		1.04										.16			.76	1.26													.08	.16		3.46
Melville ‖	Red	.12	.15								.45	.22		1.25	.36	.97	T.	2.03	.20	.58	.57			.75			.03	.37	.17	.37	.45		9.04
Minden ‖	do	.13	.10											T.	3.90	2.25	.75	.18		.07		.05	1.15	T.		T.	.52	.39	.46	.70	.05		10.70
Monroe ‖	Ouachita	.73	.71		.16											1.18	2.77					.78	.06	.06				.42	.97	.07			7.91
Morgan City ‖	Coast		2.22	T.	.13		.22	1.83			.96		T.	1.22	2.95		T.	T.	T.	1.10		.50		.53	.15	.46	.29			.15	.35	T.		13.06
Newellton	Mississippi	.83		.32							.22	T.	.25	.62	.75	.32	T.	T.	.07	T.	T.	T.	.67			T.	T.	T.	.48					4.53
New Iberia	Coast	T.	.55		T.	.80				.40			T.	1.00	.38	T.		.48	.26		.38		.20	.07		1.95	.20	.15	.10	.50	.05			7.45
New Orleans (1)	do	T.	T.	T.	.05					.14	T.	T.	.08	1.22	.61	T.	T.	.83	.62	.77	1.99		.21	.01	.62	T.	.04	.96	T.	T.				8.15
New Orleans (2)	do	.07	.06		.03					.07	.02		.12	1.57	1.23	.12		.88	.07	.44	1.71		.33	.20	.93	.19	.58	.17			.06		8.85
New Orleans (3)	do	.21	.01	.17	.01					.08	.01	.02	.09	1.11	1.26			.01	.20	.11	.90		.10	.01	1.20	.11	.02	.22		.02			5.87
New Orleans (4)	do	.07	.04		.02					.06			.10	1.50	1.19	.03		.85	.05	.42	1.68		.31	.15	.90	.56	.14	.15		.03	.01		8.26
New Orleans (5)	do		.02		.01					.08			.02	1.34	1.48	.23		1.15	.50	.03	2.12		.17	.04	1.80	.07	.31	.35	.05	.01			9.78
New Orleans (6)	do				.05					.14			.02	1.23	.92			.72	.33	.75	1.99		.18	.01	.62		.07	.85					7.88
New Orleans (7)	do	.07								.33			1.67	.97	.47		.72	.68	.05	.24	1.95		.24	.08	.45		.35	2.07					10.34
New Orleans (8)	do									.07		.01	.25	1.05	.40			1.59	.96	.55	1.08		1.08	.02	.76		.12	.90					8.84
Opelousas ‖	do		.57								.31			.35	1.41	.25	.12		.15	.09	1.24	.28		.47				.23					6.07
Paradis	do	.20	.40									.34	.44	.48			3.12	.18	.17	.28	.72			.70	.02	.87		.12		.35			8.39
Pearl River ‖	Pearl	.52	.02	.32	.62		T.					.20	.12	.68	T.	1.08	.22	.38	.60	T.	1.80	T.	.02	.70		.28	.86	.32		.26			9.00
Plain Dealing	Red														.59	.69	.22	.37	.02	.02			1.06		.05	.80				.17			3.39
Rayne ‖	Coast		.82								.10			.30	.20	.76	.20	T.	T.			1.10		1.10	T.	T.	.30			.05	2.00		6.93
Reserve ‖	do		.16		.32	.07					.71				.34	.42					.29		.61			.06	.74	.37	.68		1.39			6.16
Robeline ‖	Red		.35												.35	.45	2.15	.35											1.15		.15		4.95
Ruston	Ouachita												.10	.20	1.80	.60											.25	.45	.62	.01			4.03
St. Francisville ‖	Mississippi		1.10								2.00				2.00	2.00		1.25			1.00			.50		1.00		1.20		1.00			13.05
Schriever ‖	Coast	.32	.42	.01	.06	.01					3.72	.48		.46	.43	.35	1.00	.52	.27	.10	.04	1.10		.87		.12	.93	.29	1.28	2.09				14.87
Sheridan	Pearl	T.	T.	T.		1.70				.07			T.	1.20	.80	.90	1.40	.09	.40	.50	.25	.25	T.	.15	1.55	.30		T.					9.56
Shreveport	Red	.51											T.		T.	1.91	T.	.01		.19	.12	.11		T.	T.		1.45	.04	.16	1.58	3.67			9.75
Simmesport ‖	do		.33										.25			.02	.16		.10	.04	T.	.41	.05		.04	.05		.20	.53	.12	.19	.08		2.57
So. University farm	Coast	.17	.59		1.97					1.40		.51	2.40	1.47	1.10	.22		.37	.02	.40	.51		T.	T.	1.01	.36	.02	.19	.01	.20			12.92
Sugartown	do	1.68											1.30			.11	1.08		.75	.64										.81			6.37
Tallulah	Mississippi	.20		.20									.14	1.20	.95	.90		.92			.26		.74				.16		.90				6.57
Walker	Coast													.84	.50	1.20	.40	.25	.10	.13			.40		.20	.60	.20						4.84

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 7, Lower Mississippi Valley.*

Date.	Colorado.						New Mexico.				Texas.				Kansas.										Oklahoma.			
	Lamar.		Leadville.		Pueblo.		Albert.		Cimarron.		Amarillo.		Paris.§§		Dodge City.		Ellinwood.		Iola.		Liberal.		Wichita.		Ardmore.§§		Bartlesville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	98	58	68	35	89	56	92	59	84	48	88	63	86	72	82	58	84	60	84	67	86	60	82	60	91	71	82	67
2....	96	63	65	44	86	57	94	60	82	48	89	62	94	65	89	61	89	65	86	62	90	62	85	66	99	69	88	63
3....	89	55	63	32	83	54	89	62	82	52	87	66	93	66	79	61	84	62	83	64	83	57	84	60	93	77	90	63
4....	93	50	68	36	93	59	90	66	83	49	85	62	85	73	82	62	86	66	82	63	84	57	81	67	88	76	84	63
5....	95	53	72	36	88	62	98	63	83	49	86	65	96	70	79	61	84	62	80	64	83	56	81	65	98	67	84	64
6....	105	61	68	40	95	58	102	61	85	47	102	64	98	72	87	66	88	65	89	64	101	67	89	67	102	75	95	67
7....	94	63	74	36	92	64	98	64	88	52	98	67	99	72	85	65	89	69	93	72	88	64	93	72	106	74	99	70
8....	105	62	75	40	98	58	102	70	89	53	97	69	103	71	99	68	100	68	94	72	103	65	93	74	108	76	101	75
9....	105	65	70	41	97	69	97	65	90	50	96	66	105	71	97	69	100	66	97	74	99	64	96	73	109	74	103	72
10....	105	66	65	39	92	64	98	66	86	56	96	66	105	72	96	68	102	73	97	72	100	65	97	76	110	74	105	73
11....	102	64	66	37	82	64	95	66	85	56	96	64	103	76	96	63	102	67	97	70	98	60	95	74	103	75	99	73
12....	100	58	63	41	88	57	97	68	81	49	92	64	97	74	93	66	98	65	94	71	98	64	91	74	101	73	97	71
13....	103	62	68	38	93	59	93	63	86	54	94	67	94	70	93	66	97	66	89	67	96	62	89	71	102	72	88	67
14....	101	63	72	39	93	62	101	66	89	55	101	68	103	70	94	67	98	65	92	68	99	61	91	70	103	72	93	66
15....	103	64	69	44	98	63	100	69	88	58	95	68	100	73	94	69	101	67	96	68	99	67	95	72	103	72	93	68
16....	104	80	71	44	95	64	99	67	86	55	94	65	92	75	92	67	100	66	94	71	96	61	93	74	93	74	93	70
17....	93	63	73	40	87	60	93	70	84	52	92	65	98	73	90	71	92	71	94	69	92	69	91	70	95	74	95	72
18....	102	65	74	42	94	64	97	65	83	55	94	68	103	74	93	67	99	64	96	69	97	62	95	72	107	73	99	72
19....	102	65	74	43	95	61	100	67	86	53	99	68	99	73	94	71	98	69	93	71	100	66	93	71	103	73	97	72
20....	107	63	64	43	96	65	100	70	87	57	100	71	104	74	102	70	103	71	95	70	106	71	96	75	109	74	99	73
21....	90	64	59	43	84	60	101	65	87	56	101	66	105	74	96	71	101	72	91	69	101	76	101	72	110	79	98	74
22....	79	55	57	41	62	53	66	53	64	51	72	56	98	75	71	57	84	67	82	66	91	57	79	66	104	80	79	71
23....	60	50	62	35	62	51	60	52	63	47	57	55	92	72	61	53	76	57	74	57	61	51	69	59	93	75	77	65
24....	79	54	58	34	70	51	67	58	80	49	75	55	87	72	68	57	80	57	72	57	67	54	75	60	77	71	72	58
25....	85	53	60	33	82	49	84	56	75	50	74	59	89	66	78	55	85	58	82	59	77	53	82	60	85	65	82	59
26....	91	57	63	35	88	48	88	60	83	44	82	59	92	66	86	60	90	50	85	55	86	58	85	61	92	66	87	58
27....	85	51	58	37	65	55	89	58	69	47	84	60	86	70	84	63	85	59	89	62	90	62	87	59	75	67	85	64
28....	75	54	62	33	76	48	94	66	68	52	63	54	82	69	71	54	76	50	77	55	72	49	75	57	78	68	79	60
29....	90	53	66	34	87	47	95	62	77	47	76	59	83	67	77	51	83	43	78	47	81	53	78	54	85	62	80	52
30....	98	52	69	38	92	59	88	62	82	47	87	58	86	61	89	57	89	54	84	49	94	56	85	55	87	60	87	48
31....	95	54	70	39	92	55	94	61	83	50	90	58	91	59	96	63	99	63	92	57	96	56	94	62	91	62	93	55
Mns..	94.5	59.4	66.6	38.6	86.9	57.9	92.3	63.2	81.9	51.2	88.4	63.1	95.1	70.5	86.9	63.1	91.7	62.9	88.1	64.5	90.8	60.8	87.7	66.7	96.8	71.6	90.4	66.0

Date.	Oklahoma.														Missouri.										Lynnville, Ky.		Jackson, Tenn.	
	Enid.§§		McAlester.		Mangum.§§		Muskogee.		Oklahoma.		Weatherford.§§		Woodward.		Caruthersville.		Ironton.§§		Lamar.§§		Olden.		Springfield.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	89	65	89	68	90	66	90	74	91	69	91	65	88	66	84	71	92	70	82	68	85	67	82	67	.....	.....	91	70
2....	94	64	93	66	96	69	90	65	91	68	89	68	93	66	84	68	89	62	87	64	86	61	84	65	.....	.....	89	68
3....	90	64	91	67	92	70	84	64	89	67	91	70	88	64	89	66	86	61	84	65	84	65	82	65	.....	.....	94	71
4....	83	63	87	69	89	66	84	69	84	63	84	62	85	62	93	67	90	59	80	65	81	64	76	63	.....	.....	97	69
5....	91	65	93	70	96	67	84	67	87	68	90	63	84	62	86	67	85	65	82	64	83	67	77	66	.....	.....	91	70
6....	94	66	96	75	95	72	94	70	95	73	97	67	94	70	86	70	88	67	92	66	88	66	85	68	.....	.....	96	68
7....	97	66	97	76	104	70	93	74	100	75	99	74	93	77	89	69	91	70	93	73	89	71	91	74	.....	.....	94	70
8....	99	68	102	75	103	69	98	72	102	74	100	70	98	66	95	71	102	67	95	74	94	70	93	73	.....	.....	98	71
9....	100	69	104	74	104	67	97	73	102	73	100	71	98	66	96	70	102	68	97	73	97	72	94	75	.....	.....	99	69
10....	101	70	105	73	106	69	99	72	103	73	103	69	99	75	97	75	99	72	98	73	96	73	94	75	.....	.....	92	71
11....	99	69	102	69	104	71	99	76	101	74	102	70	101	69	95	74	99	67	97	73	93	71	92	75	.....	.....	93	72
12....	95	70	97	73	101	69	94	73	96	72	96	68	95	65	90	74	96	65	89	72	90	70	88	73	.....	.....	88	69
13....	96	72	93	69	102	68	88	69	93	72	96	66	96	63	81	71	79	68	86	73	84	69	77	69	.....	.....	87	69
14....	95	69	96	70	102	68	90	68	96	70	101	65	97	62	82	72	79	71	89	68	73	70	78	69	.....	.....	89	71
15....	97	67	96	72	101	68	93	70	97	69	98	64	98	60	82	71	92	71	94	76	84	69	86	68	.....	.....	90	72
16....	95	68	93	74	100	68	91	70	94	69	96	65	96	61	91	71	96	64	92	69	88	69	86	69	.....	.....	.....	.....
17....	95	69	94	72	101	66	90	71	95	72	95	65	96	62	92	72	99	66	93	71	90	69	88	72	.....	.....	92	70
18....	98	70	96	74	102	68	95	73	97	73	99	67	97	65	91	75	91	66	95	71	90	68	90	71	.....	.....	.....	.....
19....	102	70	102	71	107	71	94	71	99	73	101	70	99	67	90	70	79	64	95	72	87	69	88	72	.....	.....	.....	.....
20....	105	71	106	74	108	72	99	74	105	77	106	73	106	67	85	67	85	62	93	70	86	66	83	69	.....	.....	.....	.....
21....	104	73	106	79	106	75	93	75	105	78	106	76	106	75	89	62	79	55	83	67	79	61	76	68	.....	.....	92	60
22....	70	68	103	79	91	72	89	77	88	73	83	69	84	59	78	62	76	66	79	66	78	63	75	68	.....	.....	79	64
23....	69	60	90	71	76	69	79	68	80	63	71	65	70	56	89	67	85	68	66	62	79	69	69	60	.....	.....	88	67
24....	79	59	88	64	68	60	73	61	75	61	71	59	67	56	89	66	64	59	71	59	76	63	63	58	.....	.....	88	65
25....	89	60	83	63	85	60	77	60	82	66	85	60	81	57	79	66	76	61	78	59	69	60	71	61	.....	.....	79	71
26....	85	62	92	61	94	61	85	60	89	64	92	58	86	59	78	68	80	59	84	57	79	60	77	62	.....	.....	84	69
27....	80	63	89	68	81	62	80	68	81	71	91	61	88	65	88	72	85	65	85	64	81	68	78	67	.....	.....	88	72
28....	85	60	79	64	87	66	70	65	79	62	77	59	74	57	83	72	76	70	77	61	76	65	72	61	.....	.....	84	71
29....	85	50	89	59	93	56	80	55	83	54	84	52	79	52	76	63	76	50	77	49	78	54	73	54	.....	.....	76	65
30....	91	49	91	57	97	61	83	53	88	57	92	54	87	53	79	56	89	45	81	51	79	50	75	53	.....	.....	78	57
31....	95	61	92	62	96	62	87	58	91	62	96	51	92	62	84	56	86	44	89	54	84	55	82	57	.....	.....	84	69
Mns..	91.6	65.2	94.6	69.6	96.0	70.3	88.7	68.2	92.2	68.9	93.0	65.0	90.8	63.4	86.8	68.4	86.5	63.5	86.8	66.1	84.1	65.6	81.5	66.7	.....	.....	88.9	68.5

TABLE 3.—*Maximum and minimum temperatures at selected stations for July, 1911. District No. 7*—Continued.

Date.	Tennessee.				Arkansas.																Mississippi.					
	Kenton.		Memphis.		Bentonville.		Corning.		Dardanelle.§§		Eldorado.§§		Fort Smith.		Little Rock.		Pine Bluff.§§		Texarkana.§§		Wynne.§§		Clarksdale.§§		Corinth.§§		Greenville.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	82	70	76	66	81	68	83	71	83	69	80	73	85	70	78	69	79	71	84	74	80	66	74	66	78	68	85	75
2....	84	69	85	70	87	63	87	67	80	60	87	67	89	64	86	66	88	68	89	68	85	67	87	67	85	69	88	69
3....	87	65	86	70	84	63	87	65	83	68	92	69	81	66	83	70	88	68	91	70	87	67	89	67	90	66	92	67
4....	81	68	88	67	79	66	90	65	87	69	90	72	85	71	88	70	90	68	90	74	91	67	91	69	94	70	93	70
5....	85	67	88	70	78	64	84	69	86	70	92	72	81	69	88	73	91	71	92	74	90	70	93	70	93	70	95	71
6....	82	69	87	70	90	67	86	69	98	60	92	74	97	72	92	72	94	72	96	75	90	70	94	70	86	66	95	74
7....	86	72	91	74	90	69	91	71	94	60	94	72	97	74	94	75	96	72	97	75	95	73	94	72	94	67	95	73
8....	96	70	95	76	95	71	.....	.....	99	60	96	71	100	73	99	73	98	71	101	75	99	72	97	70	97	68	97	71
9....	95	69	96	78	95	72	97	72	98	60	99	72	100	76	102	77	102	73	101	75	98	76	100	73	97	67	100	75
10....	95	71	96	79	96	70	99	84	97	70	98	75	102	76	97	79	100	75	100	77	97	75	97	73	96	74	99	75
11....	93	71	94	78	93	72	96	85	94	74	97	74	97	78	95	77	98	76	99	77	93	72	94	74	90	73	97	75
12....	89	72	85	70	90	68	92	75	90	72	91	71	93	76	86	71	88	74	94	74	87	79	81	72	80	72	80	73
13....	84	70	85	72	80	68	84	71	77	71	90	72	85	74	80	71	88	72	90	75	85	72	83	72	85	70	86	72
14....	82	71	81	74	85	69	79	69	88	73	89	74	91	71	87	72	88	68	97	76	83	73	83	74	86	70	86	73
15....	83	70	85	73	87	67	84	75	86	74	84	72	92	73	77	71	80	73	97	75	85	71	85	73	86	71	87	72
16....	91	70	90	73	85	69	91	70	87	74	87	72	85	76	87	74	90	72	86	74	90	72	92	72	94	70	93	73
17....	92	73	90	75	88	68	90	72	92	73	92	73	89	75	91	75	91	74	94	73	90	72	93	74	94	72	93	73
18....	92	73	86	74	91	69	91	73	91	72	94	74	92	75	90	74	88	76	95	74	92	73	83	74	80	70	92	74
19....	86	69	86	67	92	68	90	70	91	71	90	71	93	73	90	71	93	70	88	73	90	68	90	72	90	68	92	72
20....	87	66	84	69	93	70	86	68	92	73	96	74	98	76	87	76	94	72	96	74	88	70	90	71	88	67	89	73
21....	87	70	84	69	85	72	84	60	83	70	90	70	88	74	84	71	86	73	95	73	83	66	86	68	88	63	90	71
22....	76	64	77	70	79	68	78	63	79	68	77	69	86	68	78	68	78	68	80	73	78	67	75	70	84	65	75	71
23....	88	67	88	67	71	64	88	68	80	69	83	71	79	72	82	69	83	68	85	72	94	66	88	66	90	66	88	67
24....	81	68	86	72	67	61	82	67	78	60	88	70	74	68	82	71	88	70	86	71	90	68	88	67	88	66	90	68
25....	79	69	77	70	68	60	77	63	79	64	87	72	77	67	76	69	80	70	85	72	80	68	83	72	82	69	89	71
26....	79	67	82	72	82	62	76	67	84	67	89	71	87	68	85	71	88	71	88	70	85	66	87	70	89	70	89	71
27....	89	71	84	74	79	63	83	71	81	69	90	71	75	71	86	68	90	73	87	71	98	71	90	72	89	70	91	73
28....	83	70	84	68	75	58	81	72	76	71	86	71	76	67	79	71	84	72	80	72	87	73	88	71	88	70	90	72
29....	81	63	76	62	75	53	77	59	79	61	79	68	83	63	78	65	80	68	80	69	78	65	80	67	78	68	83	68
30....	79	55	77	58	79	49	79	54	83	53	82	57	83	56	78	60	80	68	82	59	80	57	82	57	76	62	82	61
31....	84	60	81	67	85	52	84	53	86	55	86	58	87	59	82	61	84	58	85	60	.....	57	85	60	84	63	87	62
Mns..	85.7	68.4	85.5	70.8	84.0	65.3	85.9[a]	68.6[a]	86.5	67.1	89.3	70.7	88.0	70.7	86.0	71.0	88.7	70.8	90.6	72.4	88.5[a]	69.3	87.8	69.8	87.7	68.4	89.9	71.1

Date.	Mississippi.						Louisiana.																			
	Kosciusko.§§		Natchez.§§		Vicksburg.		Alexandria.§§		Baton Rouge.§§		Covington.§§		Lafayette.§§		Lake Charles.§§		Monroe.§§		New Orleans.		Robeline.§§		Schriever.§§		Shreveport.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	86	70	87	72	86	70	90	70	92	68	92	73	89	73	91	69	84	72	89	76	87	72	91	71	87	69
2.....	87	69	89	69	87	70	90	66	91	67	91	71	90	69	95	64	89	68	88	74	93	60	92	70	90	66
3.....	91	66	92	70	91	70	94	66	92	68	92	69	93	69	94	65	92	72	91	74	97	61	94	70	92	71
4.....	95	68	93	72	90	73	94	70	93	67	96	71	94	73	95	70	91	70	92	76	95	72	95	71	90	75
5.....	94	70	93	73	91	73	96	71	95	67	95	72	94	74	94	70	94	75	94	76	96	73	95	72	92	73
6.....	94	71	92	73	90	75	95	72	96	68	96	71	92	74	95	67	94	72	94	78	93	74	97	73	93	75
7.....	95	70	94	73	92	75	95	70	96	69	96	72	93	72	96	69	97	74	93	77	96	74	97	72	94	74
8.....	97	71	96	73	95	76	98	71	95	70	99	75	96	74	99	71	98	74	95	78	99	74	97	75	99	75
9.....	98	73	97	72	96	76	99	72	97	70	102	75	99	76	101	72	102	75	97	74	100	70	101	75	102	76
10.....	97	73	98	71	98	76	99	73	97	71	99	72	99	69	97	68	102	76	93	76	98	70	97	68	100	79
11.....	89	72	94	72	92	75	97	71	95	72	95	73	95	73	97	71	102	73	89	77	97	70	94	72	96	76
12.....	75	71	86	71	80	72	89	70	91	72	92	73	93	72	96	71	85	78	88	75	96	69	91	74	90	73
13.....	83	71	84	74	84	74	88	70	88	72	81	74	90	73	91	71	92	74	80	72	92	68	78	74	94	72
14.....	85	72	88	72	84	73	92	70	90	71	91	73	90	74	92	70	89	74	91	71	96	70	94	73	95	72
15.....	89	71	89	72	87	73	92	73	92	71	88	72	94	73	94	68	88	68	88	73	95	68	90	71	93	72
16.....	92	71	92	74	87	74	90	73	94	72	90	73	94	74	95	69	91	72	88	75	89	70	89	72	89	72
17.....	93	70	91	72	91	73	90	72	90	71	95	73	89	74	90	69	94	73	86	74	95	71	88	71	93	74
18.....	86	73	91	72	90	74	92	70	89	71	91	71	94	72	86	71	92	74	88	74	95	73	88	70	96	74
19.....	91	70	88	73	89	75	94	72	90	70	93	73	95	72	91	64	94	74	89	75	96	73	91	73	93	74
20.....	87	71	90	71	89	72	95	73	92	71	93	74	96	75	97	61	97	73	91	69	98	73	90	73	97	74
21.....	90	67	92	69	89	71	93	72	94	70	92	70	97	70	98	67	94	70	90	73	96	71	94	69	93	72
22.....	80	68	78	69	76	69	89	71	86	71	84	70	90	72	99	69	86	71	90	72	93	72	92	72	87	74
23.....	88	65	86	68	87	68	89	70	86	69	90	69	88	69	86	69	89	71	85	71	87	72	88	70	86	72
24.....	88	65	88	67	88	71	89	69	90	68	90	69	94	69	89	67	90	72	88	73	90	68	92	69	89	71
25.....	90	70	88	70	88	71	90	69	88	69	91	70	82	70	85	68	92	70	89	73	91	67	91	71	90	71
26.....	91	68	86	71	88	72	86	72	89	68	90	72	89	73	88	69	93	73	88	75	88	68	92	69	89	72
27.....	89	70	92	72	88	74	89	71	90	68	93	72	90	72	90	69	88	73	90	74	92	70	92	72	90	72
28.....	92	71	83	71	83	73	92	72	91	67	94	72	94	72	94	70	85	72	88	75	94	72	88	72	86	72
29.....	82	68	86	71	84	72	88	72	92	67	91	73	88	73	91	70	85	72	88	73	77	71	91	71	78	65
30.....	83	61	85	67	81	63	87	66	87	67	91	71	89	69	89	67	85	61	87	74	83	64	91	72	83	62
31.....	84	65	86	63	86	69	90	63	91	67	92	70	89	69	89	63	89	62	87	74	87	56	92	72	85	62
Means.....	89.1	69.4	89.5	70.9	88.0	72.3	92.0	70.4	91.6	69.3	92.4	71.9	92.2	72.0	93.0	68.3	91.6	71.9	89.5	74.2	92.9	69.5	92.0	71.6	91.3	72.0

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the United States Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 8, TEXAS AND THE RIO GRANDE VALLEY.

B. BUNNEMEYER, District Editor.

GENERAL SUMMARY.

The weather during August was warmer than normal in the greater portion of the district, especially in the Texas area, and there was an abundance of sunshine. The precipitation was generally deficient, although good showers occurred in Colorado and in the northern half of Texas. Droughty conditions continued in the lower Rio Grande Valley and lower coast counties, and a large number of stations in this section received no moisture during the month. There was but little precipitation in either Colorado or New Mexico prior to the 10th, but from that date to the 28th showers occurred daily in those areas, although the rainfall was generally light until after the 20th. In Texas generally light and widely scattered showers occurred from the 1st to 3d and 11th to 19th, but from the 23d to 29th good showers occurred in the greater portion of the State. The number of days with 0.01 inch or more of precipitation averaged 12 in Colorado, 6 in New Mexico, and 4 in Texas. There were very few severe local storms during the month and only two or three deaths by lightning were reported.

The greatest and least monthly amounts of precipitation in Colorado were 4.32 inches at Cumbres and 0.88 inch at Garnett; in New Mexico, 4.50 inches at Rosedale and 0.14 inch at Agricultural College; and in Texas, 7.31 inches at San Angelo and none at 8 stations, mostly in the lower coast counties, while at 4 other stations the amounts were too small to be measured. Excessive precipitation of 2.50 inches or more in 24 consecutive hours occurred at 19 stations in Texas, chiefly in the northern half of the State.

TEMPERATURE.

The monthly mean temperature was 1.1° below the normal in Colorado, 0.1° above in New Mexico, and 1.6° above in Texas. The excess of temperature was greatest in the central and southwestern portions of Texas, where it ranged from 3° to 5°. During the first and second decades the temperatures were persistently above the normal, with warm days and comparatively cool nights, due to active radiation under clear skies. During the third decade there was much cloudy weather and the temperatures were not so high. The lowest temperatures occurred generally after the 27th. The daily range of temperature varied from about 10° on the Texas coast to about 40° in the extreme northern portion of the district.

The highest and lowest temperatures reported were: In Colorado, 90° at Saguache on the 19th, and 25° at Hermit on the 29th; in New Mexico, 106° at Fort Sumner on the 2d and at Rio Grande Dam on the 8th, and 28° at Anchor Mine on the 26th; and in Texas 112° at Bonham on the 22d, and 53° at Plainview on the 30th. The local monthly means ranged from 53.6° to 62° in Colorado, from 58.2° to 83.2° in New Mexico, and from 75.6° to 90.3° in Texas.

PRECIPITATION.

There was a decided shortage of precipitation over both the Rio Grande and Rio Pecos watersheds. The average over the former was only 1.30 and over the latter 1.56 inches. These amounts are only about one-third of those reported for July and are also much less than those for the corresponding month of the previous year. The deficiency extended over nearly all portions of their areas and was most pronounced over their lower reaches. The greatest monthly precipitation in the Rio Grande drainage basin was 4.50 inches at Rosedale, N. Mex., and none occurred at Llano Grande, Tex., while in that of the Rio Pecos the greatest was 3.08 inches at Harveys Upper Ranch, and none occurred at Barstow, Tex.

While the Texas watersheds showed a decided deficiency of precipitation over their lower portions, they had some heavy local rains over their upper reaches, which occurred principally during the third decade of the month. In a few localities in the upper reaches of the Colorado, Brazos, Trinity, and Sabine Rivers the monthly amounts ranged from 6 to 7 inches, the greatest being 7.31 inches at San Angelo. The greatest deficiency occurred in the coastal plains, and a large number of stations in this section received practically no moisture during the month. The following are the average monthly amounts in inches for the various watersheds: Nueces, 1.78; San Antonio, 1.63; Guadalupe, 1.32; Lavaca, 1.06; Colorado, 2.03; Brazos, 2.08; Trinity, 3; Neches, 3.20; Sabine, 3.71; and coastal plains, 1.23. These amounts are decidedly less than those reported for July, but they are much greater than for the corresponding month of last year.

RIVER CONDITIONS.

The Rio Pecos and the upper Rio Grande were at flood stage during July, but the flood waters did not show up much in the lower Rio Grande, the maximum rise at Mission, Tex., being only about 6 feet.

Of the Texas streams the Guadalupe, Sabine, and Neches were at low-water mark during the month, although the last-named river had a few unimportant rises. The Colorado, Brazos, and Trinity were falling during the greater part of the month, but after the 26th sharp rises occurred in the upper and middle portions of the Brazos and Colorado and in the upper portions of the Trinity. At Waco on the Brazos the stage was 13.6 feet on the 31st, which is higher than any previous stage at that place in August since the records began in 1903. At Dallas on the Trinity a stage of 25.5 feet was reached on the 31st, which is 0.5 foot above flood stage. Timely warnings of these rises were given and no damage resulted, as all movable property was carried beyond the danger line.

PROTECTING TRUCK AGAINST FROST.

By E. W. GRUSS, Houston Heights, Tex.

How to protect his crops against loss by frost is the problem that confronts the commercial trucker each year anew. To the trucker with sufficient capital the solution of this question need not present any difficulties, since he has but to determine upon the system of protection to be installed and then proceed to execute his plans. Not so with the grower of limited means, and the majority of truckers belong to this class. As their plants are generally undercapitalized, they are confronted by a serious problem when the question of protecting against frost arises.

The truckers as a rule are a hard-working people, in fact, more so than those engaged in general farming, and the returns which they realize for the products of their labor are so uncertain and depend upon so many conditions that they are loth to assume obligations which they may not be able to meet. So long as the weather remains mild the prospects are good; but if a frost should occur the crops may be heavily damaged or even totally destroyed. Such losses will be heavy in the aggregate unless the crops are protected.

In the April Review the time for marketing the winter crops of the Gulf coast country was given from December 1 to May 1. By including the spring vegetables, such as onions, potatoes, cabbage, tomatoes, cucumbers, melons, beans, and a few other varieties of minor importance, the marketing time would probably have to be extended to August 1. The earlier the spring crops can be marketed the better will be the financial returns. These crops, however, are so tender that a cold wind may often do as much damage as a frost. It is therefore necessary to protect the spring crops as well as the winter crops. The methods of frost protection were discussed in the April Review. Nothing can be added unless it be the hope that meteorologists may discover hitherto unknown laws or rules that would enable them to give still more timely warning than they now do. This would be of great benefit to the truckers of limited means, inasmuch as it would give them more time to protect their crops in their own primitive way.

What to protect.—The commercial truck crops which are grown in the open in south Texas during the winter months are: (1) Onions, cabbage, and strawberries; and (2) cauliflower, lettuce, beets, spinach, turnips, radishes, and carrots. The first group represents the money crops, on account of the large acreage devoted to them and of their great commercial value. The second group, although equally valuable commercially, is of less importance because their acreage is considerably smaller and they do not move in solid carload lots like the former. In point of susceptibility to cold the crops under group one rank inversely in the order given, while those of group two rank in the order given, except spinach, which is the hardiest of these crops.

On account of its great commercial value the strawberry should have the most careful attention, not only as regards cultural methods, but also as regards watchfulness and the readiness of means for protecting against frost. Cauliflower is more sensitive to cold than the strawberry and requires protection when onions and cabbage are out of danger. Lettuce will lose much of its value by frost burns, which render it unsightly and requires close trimming. It is a well-known fact that if a heavy frost affects lettuce or cabbage during the heading period, or even when that process is almost completed, the heads will loosen up and never grow solid again. This renders these crops practically valueless, as no buyer will care to make an offer for the same. Beets will not suffer much from frost unless they are very young or the cold is intense. If the roots have not been injured, they will make a new growth of tops. Radishes and turnips are not so cold resistant as is commonly believed. They may not be killed outright by a heavy frost, but the effect is almost as bad as total destruction, because in either case they will become soft, spongy, or hollow, and commercially valueless. Spinach, carrots, and onions, except the Bermuda varieties, are more cold resistant than any of the other truck crops; but even they will be destroyed by such freezes as occurred in January and February, 1911.

Tomatoes and potatoes are the most remunerative spring crops. The former must be kept in cold frames until the danger of frost has passed. This plan will require extensive cold frames, but as the plants are confined to a limited space they can be protected much easier than if they were in the field. The same applies to peppers and eggplants. Potatoes are more easily cared for than any other spring crop. Sprouting may be delayed by storing them in a cool dry place, and planting should be so timed that the sprouts will not appear above ground until after the danger of severe frost is over. Three weeks usually elapse between the planting of potatoes and the appearance of the sprouts above ground.

Cucumbers and cantaloupes are two very remunerative crops if marketed early. The trucker who grows them for home consumption only may do so entirely in cold frames, but this is not practicable when they are grown for shipment. The demand for these roducts depends in a large measure upon the weather prevailing in the section to which they are to be shipped. It is therefore advisable to so time the planting of these crops that they will be ready for market at the proper season.

When to protect.—Crops generally, and truck crops especially, will be in the best condition when they have had continuous growth. To this end they should have a fertile soil, and the weather should be sufficiently favorable to render available the inactive plant food in the soil, or an unusual quantity of quickly available plant food may be supplied in order to overcome the retarded nitrification caused by a lower temperature. As rapidly growing plants are necessarily very tender, it is evident that the utmost care must be taken to prevent a check in their growth and to be ready to protect them against frost during critical periods of their development.

Some inexperienced growers labor under the impression that protection should be provided continuously. But this is not advisable, as continuous protection causes the plants to become supersensitive and therefore less cold resisting. Cabbage, cauliflower, and lettuce should be closely watched from the time the heads begin to form until they are ready for cutting. Peas and strawberries are most susceptible to frost when they are in bloom and while maturing pods or berries. Turnips, beets, radishes, and carrots require the most attention during the first stages of their growth. If frost affects them when the roots have attained marketable size, the loss sustained is chiefly in those roots that are exposed to the cold. Spinach and onions are the most hardy crops. They will survive any frost of a medium degree of severity. Nothing short of a freeze will actually kill them. Freezes such as occurred in south Texas in January and February, 1911, will kill anything which is not protected.

How to protect.—The United States Government maintains a Weather Bureau for the benefit of agriculture.

The forecasts are published daily in the press and disseminated from distributing centers in every State of the Union by mail, telephone, and otherwise. Through the cooperation of telephone companies the Weather Bureau is able to send warnings of frosts and cold waves into the rural districts that can not be reached so quickly by any other means, and there is no reason why anyone should fail to receive and utilize the forecasts. The writer has been reliably informed that a cane grower in southwest Texas saved $10,000 through the timely warning of a cold wave, by cutting and windrowing his cane. The expense to the farmer for telephonic connection is small, while the entire crop may be saved from destruction by the timely receipt of a single warning. Beyond requiring a certain number of subscribers to justify the expense of establishing a rural line, the telephone company makes no demands. Telephonic connection is essential in transmitting warnings to the rural districts, and no farmer should be without a telephone.

Concerning the methods employed in giving protection against frost, much depends upon the means at the command of the grower. The man financially well situated may make his choice between sheds, frames, overhead irrigation and flooding, orchard heaters, and other methods, but the grower of limited means must necessarily resort to a less expensive protection. The simplest and most inexpensive form of protection against frost is the covering of the plant with soil. This is accomplished by running a half shovel or small turning plow sufficiently close so that the upturned soil will just cover the plants. Only one furrow should be thrown on the plants, and they should not remain under this cover longer than necessary. When repeated coverings are made, the beds will become unreasonably high, and the work of uncovering should be performed with a hoe.

Covering plants with hay or straw requires more preliminary preparations. Inferior grades of hay or straw will answer the purpose, or pine needles may be used. The material should be kept distributed over the field so as to be near at hand when needed. As in the case of soil, this covering must be removed after each frost to prevent the crop from being injured. Lettuce in the head, for instance, will begin to decay if the covering remains during warm days. Onions, potatoes, and a few other plants will grow through the covering, but they will be spindling and weak in stem.

Matting and similar material have been and are used with success for covering purposes. The cost of the material, the necessity of renewing it periodically, and its uselessness for any other purpose prevent this kind of covering from growing in favor. Any of the foregoing methods will be satisfactory on low-growing crops, but in the case of tall plants different methods must be applied. The following are those most commonly used:

Sheds, of which the sides and roof provide a half light, will have a slightly higher temperature than the open air, and by the use of a few smudge pots or fires the temperature may be maintained above the danger point. The cost of construction, however, limits their use to small areas.

Smudging is a method that even a poor man may use. Worthless hay, straw, pine needles, sawdust, wood sufficiently decayed to prevent its blazing, are materials that can be provided with little or no expense. It is my opinion that a smudge resulting from the burning of vegetable matter is preferable to that resulting from the burning of mineral fuel. Some experimenting will be necessary to determine whether or not smudging has any deteriorating effect upon the flavor of the vegetables.

Flooding will doubtless prevent the temperature from falling to the danger point, but the quantity of water required would not be favorable to the health of the plant. The installation of an overhead sprinkling plant would prove equally effective and be probably cheaper. This method was described in the April Review.

For spring crops the best method of protecting against frost is to plant in spent hotbeds or cold frames. Potatoes may be covered up or smudged, but the other spring crops should have absolute protection, because even a strong, raw wind will injure and, in many instances, kill them.

TABLE 1.—*Climatological data for August, 1911. District No. 8, Texas and Rio Grande Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Colorado.																		
Blanca	Costilla	7,865	2	59.6	.....	85	15	35	7	47	1.52	.....	0.91	0	9	9	21	1	sw.	Dr. L. C. Audrian.
Cumbres	Conejos	10,615	4	.....	.....	.....	.....	.....	.....	.....	4.32	.....	1.38	0	11	13	14	4	.....	Mrs. Ida M. Lively.
Garnett	Costilla	7,576	18	61.1	+ 0.2	87	7†	35	29†	49	0.88	− 0.42	0.47	0	4	4	23	4	sw.	Chas. Speiser.
Hermit	Hinsdale	9,843	4	.....	.....	.....	.....	25	29	....	3.03	.....	1.52	0	13	14	13	4	.....	Marion Mason.
La Veta Pass	Costilla	9,000	1	.....	.....	.....	.....	.....	.....	.....	3.01	.....	1.01	0	13	0	9	22	w.	Clara M. Wright.
Manassa	Conejos	7,700	5	59.4°	− 1.8	87°	9	27°	30	52°	.....	.....	.....	.....	.....	12°	8°	8°	sw.	J. B. Chapman.
Platoro	do	9,675	4	.....	.....	.....	.....	.....	.....	.....	3.53	.....	1.27	0	19	16	10	5	w.	Walter R. Hook.
Saguache	Saguache	7,740	19	62.0ª	− 0.6	90ª	19	36ª	26	50ª	.....	.....	.....	.....	.....	6ᵍ	3ᵍ	16ᵍ	w.	Eugene Williams.
San Luis	Costilla	7,794	20	60.6	− 1.5	86	19	36	28†	44	2.32	+ 0.77	0.77	0	13	12	19	0	sw.	P. B. Albright.
Wagon Wheel Gap Experiment Station.	Mineral	9,235	....	53.6	− 1.6	77	19	33	29	37	2.97	+ 0.78	1.27	0	14	9	16	6	w.	U. S. Weather Bureau.
New Mexico.																				
Agricultural College	Dona Ana	3,863	49	79.6	+ 0.2	103	7	56	2†	44	0.14	− 1.50	0.09	0	2	18	12	1	se.	New Mexico Agricultural College.
Alamogordo (near)	Otero	4,338	10	79.0	+ 0.7	104	7†	53	30†	41	0.59	− 1.67	0.22	0	5	8	19	4	sw.	Charles Sutton.
Alamogordo	do	4,320	2	.....	.....	.....	.....	.....	.....	.....	0.68	.....	0.29	0	5	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Alamos Ranch	Sandoval	7,800	1	.....	.....	.....	.....	.....	.....	.....	1.39	.....	0.43	0	10	24	4	3	sw.	Harold H. Brooks.
Albuquerque	Bernalillo	5,000	35	.....	.....	.....	.....	.....	.....	.....	0.62	− 0.58	0.34	0	5	18	10	3	w.	Pitt Ross, C. E.
Ancho	Lincoln	6,112	2	.....	.....	.....	.....	.....	.....	.....	2.16	.....	1.45	0	4	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Anchor Mine	Taos	10,600	....	.....	.....	82	7†	28	26	....	2.05	.....	1.00	0	5	17	13	1	e.	Charles H. Brigham.
Artesia	Eddy	3,350	4	76.0	.....	103	7	55	31	43	1.99	.....	1.42	0	5	23	4	4	se.	Will Benson, C. E.
Aspen Grove Ranch	Rio Arriba	9,000	2	.....	.....	.....	.....	.....	.....	.....	3.19	.....	0.83	0	13	6	24	1	.....	Junius D. Maupin.
Batemans Ranch	do	8,900	2	.....	.....	.....	.....	.....	.....	.....	3.21	.....	1.12	0	9	12	17	2	w.	John W. Bateman.
Berino	Dona Ana	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.10	0	3	20	11	0	e.	C. A. Thompson.
Bluewater	Valencia	6,732	9	65.2	− 2.3	88	7†	37	31	47	2.17	+ 0.52	0.58	0	11	9	16	6	s.	Bluewater Development Co.
Boaz	Chaves	4,154	2	77.2	.....	104	14	53	31	47	1.63	.....	0.77	0	4	16	12	3	w.	D. C. Savage.
Capitan	Lincoln	6,348	2	.....	.....	.....	.....	.....	.....	.....	1.48	.....	0.60	0	13	3	10	18	s.	Agent E. P. & S. W. R. R.
Carlsbad	Eddy	3,120	16	79.5	− 0.5	104	7	57	30	43	1.23	− 0.94	0.64	0	5	19	7	5	se.	U. S. Reclamation Service.
Carrizozo	Lincoln	5,429	3	76.1	.....	101	20	52	26	40	1.04	.....	0.50	0	4	25	2	4	w.	Agent E. P. & S. W. R. R.
Chama	Rio Arriba	7,851	12	60.5	− 3.7	86	19	34	5	44	3.39	+ 0.74	1.34	0	8	17	13	1	sw.	Frank C. Johnson.
Cloudcroft	Otero	8,650	8	62.8	.....	85	7†	39	28	38	1.06	.....	0.20	0	10	16	15	0	w.	Agent E. P. & S. W. R. R.
Corona	Lincoln	6,666	2	.....	.....	.....	.....	.....	.....	.....	0.60	.....	0.40	0	2	15	8	8	s.	Do.
Coyote	do	5,800	2	.....	.....	.....	.....	.....	.....	.....	2.42	.....	1.95	0	12	14	3	14	e.	Do.
Cundiyo	Santa Fe	6,889	2	.....	.....	.....	.....	.....	.....	.....	0.91	.....	0.40	0	4	25	2	4	w.	Juan Vijil.
Demonstration Farm	San Miguel	6,800	2	.....	.....	.....	.....	.....	.....	.....	1.22	.....	0.40	0	6	.....	.....	.....	.....	Erb & Westerman.
Duran	Torrance	6,272	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Escondido	Otero	4,014	2	.....	.....	.....	.....	.....	.....	.....	0.82	.....	0.69	0	2	18	11	2	nw.	Do.
Espanola	Rio Arriba	5,590	13	70.2	− 1.2	95	10	46	5†	48	0.37	− 1.38	0.34	0	2	16	14	1	sw.	Mrs. E. F. McBride.
Estancia	Torrance	6,140	6	77.3	.....	96	15†	58	7	34	1.88	.....	0.71	0	6	18	7	6	e.	Agent N. M. Centl. R. R.
Fort Stanton	Lincoln	6,231	33	68.6	+ 1.4	96	7	42	6	53	1.83	− 1.67	0.90	0	9	19	7	5	se.	U. S. Sanitarium.
Fort Sumner	Guadalupe	3,960	3	77.9	.....	106	2	52	4	50	1.55	.....	1.51	0	3	27	2	2	sw.	F. A. Manzanares.
Gallinas	Lincoln	6,63[illegible]	2	.....	.....	.....	.....	.....	.....	.....	1.85	.....	0.59	0	5	22	1	8	w.	Agent E. P. & S. W. R. R.
Gallinas Planting Station.	San Miguel	7,5[illegible]	4	63.6	.....	87	8†	40	29	42	2.38	.....	0.55	0	7	16	11	4	sw.	U. S. Forest Service.
Glorieta Ranch	Socorro	5,70[illegible]	1	.....	.....	.....	.....	.....	.....	.....	1.87	.....	1.02	0	7	18	6	7	sw.	Charles M. Crossman.
Harveys Upper Ranch	San Miguel	9,400	2	.....	.....	.....	.....	.....	.....	.....	3.08	.....	0.64	0	12	12	17	2	se.	Simon B. Warner.
Hillsboro	Sierra	5,224	13	77.4	+ 2.6	101	7†	50	27†	45	0.68	− 1.51	0.45	0	5	5	22	3	sw.	Dr. Frank I. Givens.
Hondo Reservoir	Chaves	3,904	2	79.8	.....	103	7†	55	31	39	1.06	.....	0.84	0	4	25	2	4	se.	U. S. Reclamation Service
Jemez Springs	Sandoval	6,100	1	69.2	.....	89	7†	49	29	33	1.68	.....	0.60	0	12	13	10	8	sw.	Linus L. Shields.
Knowles (near)	Eddy	4,300	1	77.5	.....	102	21	52	29†	38	0.53	.....	0.25	0	3	22	6	3	se.	J. W. Mosley.
Laguna	Valencia	5,840	6	72.8	.....	95	7†	50	28†	41	0.70	.....	0.35	0	3	.....	.....	.....	w.	Gus Weiss.
Lagunita	Guadalupe	4,500	6	73.7	.....	100	14	47	5	49	2.19	.....	2.15	0	2	19	7	5	sw.	P. A. Turnbull.
Lake Valley	Sierra	5,412	6	.....	.....	.....	.....	.....	.....	.....	0.62	.....	0.20	0	8	9	22	0	sw.	William P. Keil.
Las Vegas	San Miguel	6,385	24	67.6	− 0.2	91	4†	44	30	42	2.30	.....	0.80	0	9	11	17	3	sw.	New Mexico Normal University.
Liston	Chaves	5,000	1	.....	.....	.....	.....	.....	.....	.....	0.48	.....	0.48	0	2	11	16	4	s.	H. G. Liston.
Los Lunas (near)	Valencia	4,900	21	73.3	− 0.8	99	6	49	1	47	.....	.....	.....	0	.....	11	20	0	.....	Richard Pohl.
Magdalena	Socorro	6,557	6	69.5	.....	95	6	48	25	40	2.00	.....	0.50	0	7	11	19	1	w.	William Pender.
Mescalero	Otero	6,627	....	66.9	.....	91	7	45	29†	40	0.93	.....	0.41	0	8	16	9	6	sw.	Rev. Richard H. Harper.
Mineral Hill	San Miguel	7,050	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. M. Nelson.
Monterey	Otero	4,436	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Mountainair	Torrance	6,547	9	70.4	+ 1.8	97	7†	47	28†	42	1.10	.....	0.38	0	8	20	9	2	sw.	Mrs. John W. Corbet.
Newman	Otero	3,989	2	.....	.....	.....	.....	.....	.....	.....	0.48	.....	0.46	0	2	19	10	2	sw.	Agent E. P. & S. W. R. R
Noria	Dona Ana	4,114	2	.....	.....	.....	.....	.....	.....	.....	1.01	.....	0.75	0	2	14	13	4	e.	Do.
Orange	Otero	5,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Brownfield, jr.
Orogrande	do	4,171	2	.....	.....	.....	.....	.....	.....	.....	0.62	.....	0.43	0	3	15	16	0	.....	Agent E. P. & S. W. R. R.
Oscura	Lincoln	5,016	2	.....	.....	102	11	58	26†	....	0.83	.....	0.31	0	6	25	5	1	e.	Eugene F. Jones.
Otis	Eddy	3,100	2	.....	.....	.....	.....	.....	.....	.....	1.05	.....	0.76	0	4	23	4	4	se.	A. M. Hove.
Otto	Santa Fe	6,200	2	.....	.....	.....	.....	.....	.....	.....	0.95	.....	0.36	0	9	.....	.....	.....	.....	O. H. Johnson.
Pastura	Guadalupe	5,285	2	.....	.....	.....	.....	48	23	.....	1.54	.....	1.20	0	4	15	12	4	s.	Agent E. P. & S. W. R. R.
Placitas (near)	Bernalillo	8,000	1	64.2	.....	85	15	43	29	31	1.16	.....	0.46	0	6	17	11	3	w.	George C. Ellis.
Plainview	Chaves	4,300	....	78.2	.....	103	14†	52	30	43	0.55	.....	0.30	0	3	16	7	8	se.	L. P. Adair.
Red River Canyon	Taos	8,956	3	58.3	.....	86	16	31	30	46	1.16	.....	1.00	0	4	19	9	3	e.	Mrs. L. R. Penn.
Rincon	Dona Ana	4,030	13	79.6	+ 1.5	104	7	56	6	46	0.50	− 2.20	0.35	0	2	10	17	4	w.	Charles H. Raitt.
Rio Grande Dam	Sierra	4,265	13	83.2°	+ 4.6	106	8	60	29	38	0.70	− 1.87	0.37	0	4	20	10	1	sw.	U. S. Reclamation Service.
Rio Grande Industrial School.	Bernalillo	5,000	....	73.7	.....	98	8†	47	1†	48	0.38	.....	0.24	0	2	17	11	3	s.	Rev. A. C. Heyman.
Rosedale	Socorro	6,910	6	68.8	.....	88	7	48	29	30	4.50	.....	1.75	0	11	15	12	4	w.	Mrs. J. J. MacIness.
Roswell	Chaves	3,578	13	76.7	+ 0.1	102	5	54	31	45	1.23	− 0.23	0.96	0	5	19	8	4	s.	U. S. Weather Bureau.
San Marcial	Socorro	4,439	15	76.6	+ 0.4	99	10	56	28	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent A., T. & S. F. R. R.
San Rafael	Valencia	6,509	7	.....	.....	.....	.....	44	30	....	2.32	.....	1.06	0	8	14	7	10	sw.	Dr. Charles M. Grover.
Santa Fe	Santa Fe	7,013	38	67.2	+ 0.2	87	9	46	29	34	0.51	− 1.85	0.27	0	8	14	16	1	ne.	Section Center.
Santa Fe Canyon	do	8,000	.....	.....	.....	.....	.....	.....	.....	.....	0.48	.....	0.30	0	3	16	3	12	e.	C. Martinez.
Santa Rosa	Guadalupe	4,624	11	77.0	.....	104	8	51	24	47	2.08	− 1.23	1.23	0	6	20	8	3	se.	John L. Chapman.
Socorro	Socorro	4,600	19	75.6	− 0.5	102	9†	49	31	47	0.46	− 0.88	0.35	0	3	30	1	0	se.	J. J. Leeson.
Stanley	Santa Fe	6,317	2	72.6	.....	94	8†	48	31	44	2.31	.....	0.82	0	4	22	4	5	w.	H. Winan.
Strauss	Dona Ana	4,080	12	.....	.....	.....	.....	.....	.....	.....	0.59	− 1.09	0.59	0	1	22	5	4	e.	Agent So. Pac. R. R.
Taft	Guadalupe	5,000	1	.....	.....	.....	.....	.....	.....	.....	3.02	.....	2.40	0	3	17	11	3	s.	J. F. Nappier.
Tajique	Torrance	.....	1	.....	.....	.....	.....	.....	.....	.....	2.36	.....	0.90	0	7	15	15	1	.....	U. S. Forest Service.
Taos	Taos	6,983	13	66.0	− 1.5	90	8†	42	26	42	1.82	− 0.07	0.75	0	11	15	15	1	w.	Alex. Gusdorf.
Taos Canyon	do	8,959	2	.....	.....	.....	.....	.....	.....	.....	2.19	.....	0.53	0	12	.....	.....	.....	.....	L. Martinez, jr.
Tecolote	Lincoln	6,539	2	.....	.....	.....	.....	.....	.....	.....	2.35	.....	0.69	0	9	10	14	7	w.	Agent E. P. & S. W. R. R.
Three Rivers	Otero	4,559	2	.....	.....	.....	.....	.....	.....	.....	0.45	.....	0.30	0	3	17	11	3	.....	Do.
Tijeras Canyon	Bernalillo	6,214	1	.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.15	0	3	26	4	1	sw.	U. S. Forest Service.

TABLE 1.—*Climatological data for August, 1911. District No. 8*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New Mexico—Contd.																				
Torrance	Torrance	6,433	2								2.30		1.11	0	5	13	14	4	e.	Agent E. P. & S. W. R. R.
Tres Piedras	Taos	8,075	6																	U. S. Forest Service.
Truchas	Rio Arriba	7,935	2	63.7		95	9	40	30†	36	1.40		0.70	0	4	11	16	4	w.	Miss Ruth Rendon.
Tularosa	Otero	4,436	3																	Irby L. Fairless.
Vaughn	Guadalupe	5,952	2			98	19	50	28		2.42		1.00	0	5	13	12	6	nw.	Agent E. P. & S. W. R. R.
Virsylvia	Taos	7,500	1	67.4		89	17	44	27	39	2.81		1.00	0	12	21	8	2	w.	Dr. I. N. Woodman.
Winsors	San Miguel	8,200	13	58.2	− 0.3	82	9†	34	6†	45	2.28	− 1.30	0.85	0	10	7	15	9	w.	Henry D. Winsor.
Texas.																				
Abilene	Taylor	1,738	26	83.3	+ 2.1	103	14	63	29	28	2.83	+ 0.86	1.39	0	7	19	4	8	s.	U. S. Weather Bureau.
Albany	Shackelford	1,429	17	83.0	+ 0.2	107	10	60	29†	42	3.59	+ 1.89	3.01	0	5	22	3	6		N. L. Bartholomew.
Alice	Jim Wells	209		88.1		104	14	70	31	29	0.00		0.00	0	0	18	11	2	s.	R. M. Boerum.
Alpine	Brewster	4,482	1								1.67		1.63	0	3	26	5	0	se.	J. Frank Dobie.
Alvin	Brazoria	49	13	82.4		97	8†	67	31	26	0.95	− 3.17	0.48	0	4	18	12	1	s.	Alvin Japanese Nursery.
Anahuac	Chambers	23	2								2.61		0.80	0	8					B. H. Collins.
Antelope	Jack										2.71		1.31	0	3	18	9	4		Chas. C. Hawkins.
Aspermont	Stonewall										1.72		1.44	0	3	24	2	5	se.	Bryant Link Co.
Austin	Travis	593	55	86.3	+ 2.7	101	13†	66	31	27	0.22	− 2.19	0.22	0	1	17	11	3	se.	A. Deussen.
Ballinger	Runnels	1,637	15	84.3	+ 1.7	105	14†	64	30	36	5.07	+ 2.75	1.05	0	6	16	8	7	s.	E. M. Eubank.
Barstow	Ward	2,573	4	84.2		111	6	59	30	47	0.00		0.00	0	0	23	4	4	e.	Lee F. Freeman.
Bay City	Matagorda	53	1								T.		T.	0	0	19	11	1	s.	E. C. Quereau.
Beaumont	Jefferson	29	10	83.0	+ 0.8	99	9	58	30	27	2.48	− 1.84	0.59	0	9	15	0	16	s.	John Bender.
Beeville	Bee	225	15	86.8	+ 2.0	102	9†	69	31	30	T.	− 2.61	T.	0	0	18	12	1	se.	L. E. Dickey.
Big Springs	Howard	2,396	13	85.4		109	5	58	30	37	0.37	− 1.39	0.14	0	5	16	10	5	s.	B. Reagan.
Blanco	Blanco	1,350	15	85.4	+ 2.1	106	9	60	31	38	0.82	− 1.08	0.47	0	3	22	8	1	s.	R. C. Crist.
Boerne	Kendall	1,412	19	82.8	+ 2.2	105	14	56	30	40	1.05	− 1.15	0.57	0	4	6	19	6	se.	F. W. Schweppe.
Booth	Fort Bend	81	10								0.40	− 3.04	0.28	0	4	27	0	4	se.	T. R. Booth.
Bowie	Montague	1,113	16	84.6	0.0	110	9	64	29†	38	4.68	+ 2.99	3.33	0	7	16	3	12	s.	Craig Anderson.
Brady	McCullough	1,500	10								3.36	+ 0.45	1.80	0	4	19	9	3		G. W. Virling, jr.
Brazoria	Brazoria	25	22	83.4	+ 2.2	97	12	69	31	26	1.30	− 3.83	0.67	0	6	28	2	1	s.	Mrs. M. A. Stevens.
Brazos	Palo Pinto	801	2								7.11		3.00	0	5	15	8	8	s.	Robt. E. Boyett.
Brenham	Washington	350	26	86.4	+ 2.6	102	19†	69	31	27	0.88	− 1.83	0.70	0	4	22	5	4	se.	Mrs. B. F. Sloan.
Bridgeport	Wise	754	2								5.96		3.20	0	8	17	5	9	s.	Claude Strange.
Brighton	Nueces	12	18	84.8	+ 1.8	96	10†	69	30	27	0.00	− 1.68	0.00	0	0	29	2	0	se.	G. H. Ritter.
Brownsville	Cameron	38	47	84.7	+ 1.0	97	8	69	31	24	T.	− 2.80	T.	0	0	18	11	2	s.	U. S. Weather Bureau.
Brownwood	Brown	1,342	19	84.5	+ 0.6	107	20	63	31	36	4.63	+ 2.67	2.55	0	9	12	17	2	s.	Mrs. Pearl Smith.
Cameron	Milam		3																	J. E. Watts.
Carmona	Polk	330	3	83.3		101	9†	55	31	35	1.78		0.65	0	7	15	11	5	s.	M. S. Spitler.
Claytonville	Fisher	2,100	16	83.8	+ 3.1	107	14	60	30	35	5.86	+ 3.95	3.30	0	5	12	9	10	se.	Wm. Lanius.
Clifton	Bosque	671									1.86		1.42	0	4	11	15	5	s.	R. M. Jones.
Coleman	Coleman	1,710	17	84.1	+ 3.7	106	15	60	31	34	2.57	− 0.51	1.73	0	3	13	15	3	s.	J. E. Stevens.
College Station	Brazos	308	21	86.0	+ 2.8	104	10†	63	31	31	2.64	+ 0.50	1.78	0	8	6	20	5	s.	Prof. G. S. Fraps.
Colorado	Mitchell	2,066	17	85.4	+ 3.1	105	6	63	1	36	2.98	+ 0.91	1.40	0	5	25	3	3	s.	R. M. Webb.
Columbia	Brazoria	34	22	83.4	+ 1.4	99	15	64	31	30	1.00	− 2.74	0.70	0	2	26	5	0	s.	R. B. Loggins.
Columbus	Colorado	206	7								0.98		0.42	0	5	14e	10e	4e	s.	Mrs. Sophie Bridge.
Corpus Christi	Nueces	20	24	82.6	+ 0.5	92	12	73	10	16	0.00	− 2.28	0.00	0	0	25	5	1	se.	U. S. Weather Bureau.
Corsicana	Navarro	445	22	84.6	+ 1.2	102	20†	63	31	28	0.74	− 1.22	0.30	0	6	20	7	4	s.	D. H. Winn.
Cotulla	La Salle	425	4																	Holland Agricultural Co.
Crockett	Houston	350	7	84.8		104	9	59	31	33	2.27		0.92	0	7	20	7	4	s.	A. M. Rencher.
Cuero	De Witt	177	21	87.8	+ 2.9	105	12†	69	31	32	3.38	+ 1.53	3.25	0	3	20	4	7	s.	H. R. Frobese.
Dallas	Dallas	466	22	85.0	+ 1.5	107	9†	62	31	35	4.14	+ 1.10	2.05	0	7	15	1	15	s.	G. A. Eisenlohr.
Danevang	Wharton	145	15	85.8	+ 2.2	103	9	69	31	33	0.10	− 3.29	0.10	0	1	29	1	1	se.	H. P. Hermansen.
Decatur	Wise	1,047	15																	Ft. Worth & Denver City Ry.
Del Rio	Valverde	952	5	89.0	+ 5.0	106	13	72	16	32	1.14	− 1.55	1.04	0	3	20	10	1	se.	U. S. Weather Bureau.
Devine	Medina	653	1	88.3		107	12	69	29	33	2.21		2.00	0	2	25	4	2	se.	M. A. Keller.
Dialville	Cherokee	575	7	83.0		104	9	59	30†	30	4.08		2.75	0	4	16	10	5	s.	J. M. B. McKnight.
Dilley	Frio	569	1								1.00		0.80	0	2					John W. Miller.
Dublin	Erath	1,466	15	85.2	+ 2.1	110	14	55	30	39	5.85	+ 3.91	2.03	0	7	13	11	7	s.	Jno. O. Shafer.
Duval	Travis	820	22	85.6	+ 1.3	101	9†	66	31	27	0.61	− 1.11	0.56	0	2	17	12	2	s.	J. C. Edgar.
Eagle Pass	Maverick	800	34	88.8	+ 2.0	105	13†	70	30	30	2.13	− 0.46	1.20	0	3	22	8	1	se.	Charles Tarver.
Eastland	Eastland	1,420	4	84.8		110	14	62	30†	43	2.58		1.20	0	5	14	11	6	s.	J. R. Gilbreath.
Edna	Jackson	71	2								0.99		0.64	0	3					E. L. Faires.
El Paso	El Paso	3,762	32	81.7	+ 3.1	102	7	63	26	32	0.45	− 1.27	0.38	0	3	20	11	0	e.	U. S. Weather Bureau.
Encinal	La Salle	558	3																	H. C. Braden.
Eola	Concho										3.05		1.55	0	2					E. W. Neal.
Fairland	Burnet	1,000	22	86.4	+ 3.6	109	22	63	31	40	3.12	+ 1.05	2.85	0	4	22	9	0	s.	R. L. Bush.
Falfurrias	Starr		3	87.2		106	21†	66	11	36	0.67		0.67	0	1	25	6	0	se.	W. A. Gardner.
Flatonia	Fayette	465	3	86.4		104	13	65	31	31	1.57		1.23	0	4	20	10	1	s.	Fred W. Laux.
Flint	Smith	483	1	84.2		105	14	55	31	37	3.71		1.86	0	6	18	6	7	sw.	F. C. C. Carter.
Floydada	Floyd										0.14		0.07	0	3					F. H. Schmidt.
Fort Clark	Kinney	1,050	40																	Post Hospital.
Fort McIntosh	Webb	460	43	90.3	+ 3.6	107	3†	67	31	37	0.52	− 2.19	0.52	0	1	16	14	1	e.	Do.
Fort Stockton	Pecos	3,050	14	83.2	+ 3.8	109	5	57	30	40	1.42	− 0.88	0.85	0	3	6	24	1	se.	H. H. Butz.
Fort Worth	Tarrant	670	16	84.5	+ 1.6	106	14	66	25	29	2.39	+ 0.52	2.08	0	6	13	11	7	s.	U. S. Weather Bureau.
Fredericksburg	Gillespie	1,742	22	83.8	+ 3.3	101	9†	62	31	33	1.43	− 0.93	1.33	0	3	25	5	1	s.	Arthur Striegler.
Gainesville	Cooke	738	21	85.0	+ 2.7	107	9†	62	30†	37	6.08	+ 3.90	3.01	0	8					J. L. Hickson.
Galveston	Galveston	69	40	82.8	+ 0.2	92	9	69	11	23	5.48	+ 0.47	2.30	0	10	11	18	2	s.	U. S. Weather Bureau.
Gatesville	Coryell	795	7	86.0		105	14	61	31	34	0.30		0.30	0	1	22	9	0		John Ryan.
Georgetown	Williamson	750	16	85.8	+ 2.7	105	13	60	31	35	0.79	− 0.57	0.77	0	2	27	4	0	s.	Prof. R. F. Young.
Gonzales	Gonzales	299	6								0.70		0.55	0	4	18	4	9	s.	J. M. Johnson.
Gorham	McLennan	444	2					62	30		0.65		0.42	0	2	17	13	1	s.	John Gorham.
Graham	Young	1,040	12	85.0	+ 1.5	109	10†	63	31	40	2.67	− 0.02	1.05	0	5	16	13	2	s.	C. W. Johnson.
Grand Falls	Ward		1								0.46		0.46	0	1	17	10	4		W. A. White.
Grand Saline	Van Zandt	399	1								4.07		1.80	0	5	10	19	2	se.	F. E. Whittemore.
Grapevine	Tarrant	670	21	85.7	+ 1.5	108	20	64	30†	33	2.97	+ 1.32	1.85	0	6	14b	10b	5b	s.	W. J. Crowley.
Greenville	Hunt	550	11	85.0	+ 0.5	107	9†	63	30†	33	1.05	− 1.26	0.60	0	4	17	0	14	s.	J. P. Regan.
Hallettsville	Lavaca	235	19	87.4	+ 3.5	103	22	72	30†	28	1.12	− 0.86	0.73	0	2	22	7	2	s.	Dr. J. E. Lay.
Hamlin	Jones	1,685									0.46		0.36	0	2					W. S. Carruthers.
Harlingen	Cameron	37									0.00		0.00	0	0	31	0	0	s.	Dr. C. W. Letzerich.
Harper	Gillespie										1.83		1.16	0	4	19	0	12		Christian Fritz.
Haskell	Haskell	1,553	16	83.7	− 0.8	106	21	62	29†	31	3.10	+ 1.58	1.60	0	3	16	10	5	s.	P. D. Sanders.
Hebbronville	Duval		4								0.32		0.32	0	1					Henry Edds.
Hempstead	Waller	254	7								3.78		1.98	0	5	15	9	7	sw.	J. H. Hancock.
Henderson	Rusk	500	2								3.02		1.50	0	10	14	12	5		M. Kangerga.

TABLE 1.—*Climatological data for August, 1911. District No. 8*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Texas*—Continued.**																				
Hewitt	McLennan	664	16	.....	.....	.....	.....	.....	.....	.....	0.68	− 0.97	0.47	0	3	.....	.....	.....	.....	I. H. Earle.
Hico	Hamilton	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.92	.....	2.15	0	5	22	2	7	s.	John A. Eakins.
Hillsboro	Hill	628	8	86.3	.....	103	14†	63	31	30	2.00	.....	1.16	0	3	.....	.....	.....	.....	W. G. Escott.
Hondo	Medina	901	12	87.6	.....	105	15	70	31	30	0.55	− 1.12	0.55	0	2	19	12	0	se.	H. E. Haass.
Houston	Harris	138	21	83.5	+ 0.6	98	9	68	31	27	1.87	− 2.06	0.57	0	9	14	15	2	s.	U. S. Weather Bureau.
Huntsville	Walker	400	27	84.7	+ 1.5	100	9	59	31	36	0.95	− 1.43	0.48	0	3	26	0	5	se.	W. Y. Barr.
Jayton	Kent	.....	1	.....	.....	.....	.....	.....	.....	.....	1.45	.....	1.45	0	1	20	6	5	e.	Wichita Valley Ry. Co.
Jewett	Leon	496	7	86.6	.....	108	9	64	1†	38	1.35	.....	0.75	0	4	17	9	5	s.	Earle Adkisson.
Junction	Kimble	1,645	8	83.7	.....	108	15	60	3	43	1.10	.....	0.60	0	2	24	3	4	s.	Judge John S. Durst.
Kaufman	Kaufman	448	12	85.8	+ 0.8	106	20†	64	31	30	1.54	.....	1.11	0	3	22	8	1	s.	B. J. Hubbard.
Kerrville	Kerr	1,650	15	83.9	+ 3.0	103	9†	59	31	37	2.19	+ 0.33	1.77	0	3	11	9	11	s.	Robert E. Horne.
Knickerbocker	Tom Green	2,050	7	85.8	.....	108	14	60	30	38	3.24	.....	1.92	0	5	19	9	3	se.	Jos. Tweedy.
Kopperl	Bosque	576	14	.....	.....	.....	.....	.....	.....	.....	2.05	+ 0.22	0.75	0	4	16	6	9	s.	T. A. Johnson.
Lagrange	Fayette	276	1	.....	.....	.....	.....	.....	.....	.....	1.88	.....	1.04	0	5	21	3	7	se.	August Hermes.
Lamesa	Dawson	2,500	1	.....	.....	.....	.....	.....	.....	.....	0.45	.....	0.25	0	3	.....	.....	.....	.....	S. D. Austin.
Lampasas	Lampasas	1,026	19	84.8	+ 2.0	106	8	60	31	34	1.07	− 0.79	0.73	0	2	23	0	8	s.	Mrs. K. I. Webber.
La Parra	Cameron	38	9	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	Jno. G. Kenedy.
Laureles Ranch	Nueces	20	11	.....	.....	.....	.....	.....	.....	.....	0.25	− 2.04	0.25	0	1	.....	.....	.....	.....	Matt Cody.
Liberty	Liberty	38	7	82.0	.....	97	20†	62	31	28	2.54	.....	1.00	0	5	20	9	2	s.	Mrs. Fannie Sneed.
Llano	Llano	1,040	20	86.4	+ 2.1	104	7†	64	31	32	1.17	− 0.18	0.65	0	5	22	9	0	s.	E. W. Torrence.
Llano Grande	Hidalgo	86	3	83.8	.....	103	23	61	31	37	0.00	.....	0.00	0	0	13	18	0	se.	M. D. Wardlow.
Long Lake	Anderson	229	6	.....	.....	.....	.....	.....	.....	.....	1.93	.....	1.25	0	4	16	11	4	s.	Geo. W. Ellis.
Longview	Gregg	336	25	84.1	+ 0.7	105	9	60	31	31	5.90	+ 4.06	1.50	0	10	18	3	10	se.	C. A. Propst.
Lubbock	Lubbock	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.21	.....	0.12	0	2	22	6	3	se.	A. L. Paschall.
Lufkin	Angelina	325	4	83.0	.....	100	9†	56	31	32	2.55	.....	1.31	0	5	22	7	2	s.	T. A. King.
Luling	Caldwell	418	22	87.6	+ 3.6	102	9†	68	31	28	1.35	− 0.58	1.00	0	6	22	6	3	s.	John Carter.
McGregor	McLennan	713	1	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	0	1	28	2	1	s.	W. H. Whitley.
Marathon	Brewster	4,043	1	75.6	.....	99	5	58	30	32	2.42	.....	1.00	0	3	11	14	6	e.	Rev. A. P. Willis.
Marble Falls	Burnet	771	3	.....	.....	.....	.....	.....	.....	.....	1.50	.....	1.50	0	1	17	1	13	s.	R. H. Cochran.
Marfa	Presidio	.....	3	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.30	0	2	.....	.....	.....	.....	R. K. Colquitt.
Marshall	Harrison	375	2	81.4	.....	99	9†	57	31	28	4.60	.....	0.99	0	11	3	26	2	sw.	Lee Scott.
Matagorda	Matagorda	12	1	.....	.....	.....	.....	.....	.....	.....	1.33	.....	1.02	0	2	29	2	0	s.	W. E. McNabb.
Mexia	Limestone	537	7	84.8	.....	105	20	60	31	35	0.32	.....	0.25	0	3	12	8	11	s.	Miss Josephine Newman.
Midland	Midland	.....	4	.....	.....	.....	.....	.....	.....	.....	0.32	.....	0.17	0	2	.....	.....	.....	.....	W. H. Neeb.
Mission	Hidalgo	140	1	86.5	.....	100	3†	70	31	27	1.60	.....	1.57	0	2	11	20	0	se.	Glenn Perryman.
Mont Belvieu	Chambers	65	1	.....	.....	.....	.....	.....	.....	.....	4.64	.....	2.82	0	5	11	16	4	s.	A. R. Shearer.
Mountain View	Pecos	2,900	1	.....	.....	.....	.....	.....	.....	.....	0.84	.....	0.49	0	2	.....	.....	.....	.....	Lucius W. Gosselin.
Mount Blanco	Crosby	2,750	22	79.2	+ 1.2	103	14	54	30	39	0.52	− 2.03	0.32	0	2	19	4	8	se.	H. C. Smith.
Nacogdoches	Nacogdoches	271	12	81.1	− 0.9	97	10†	56	31	29	2.09	− 0.32	1.12	0	4	13	12	6	s.	Miss Mary Hofmann.
New Braunfels	Comal	720	22	84.7	+ 2.4	100	9†	63	31	30	1.18	− 1.17	1.11	0	2	18	13	0	s.	J. Giesecke.
Palestine	Anderson	510	29	82.6	+ 2.1	100	20	60	31	29	3.01	+ 0.79	2.88	0	5	12	14	5	s.	U. S. Weather Bureau.
Panter	Hood	1,000	22	.....	.....	.....	.....	.....	.....	.....	3.48	+ 1.12	1.93	0	5	.....	.....	.....	.....	E. H. Snider.
Pearsall	Frio	629	1	.....	.....	.....	.....	.....	.....	.....	2.84	.....	2.77	0	2	.....	.....	.....	.....	Earnest DeVilbiss.
Pierce	Wharton	102	5	82.6	.....	101	9†	62	31	34	0.65	.....	0.50	0	2	14	16	1	.....	R. B. Pointer.
Plainview	Hale	3,370	15	75.7	− 0.9	100	21	53	30	38	1.03	− 1.41	0.64	0	5	20	9	2	.....	J. F. Sander.
Port Arthur	Jefferson	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.05	.....	2.75	0	8	.....	.....	.....	.....	Griffing Bros. Co.
Port Lavaca	Calhoun	20	10	86.2	+ 2.4	100	12	72	9	26	T.	− 3.25	T.	0	0	28	2	1	s.	J. H. Bickford.
Post City	Garza	2,700	1	.....	.....	.....	.....	.....	.....	.....	1.56	.....	0.95	0	3	26	3	2	s.	W. L. Dodd.
Putnam	Callahan	1,591	.....	.....	.....	.....	.....	.....	.....	.....	4.71	.....	2.07	0	6	13	13	5	s.	Rev. Jos. Reisdorff.
Raymondville	Cameron	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.43	.....	0.30	0	2	23	8	0	se.	C. H. Pease.
Ricardo	Nueces	57	2	85.2	.....	100	12	70	10	27	1.30	.....	1.26	0	2	23	6	2	se.	Lindsay Waters.
Riverside	Walker	169	7	.....	.....	.....	.....	.....	.....	.....	1.35	.....	0.65	0	3	21	2	8	s.	Mrs. C. W. Higdon.
Robert Lee	Coke	1,850	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. D. Pearce.
Rockland	Tyler	136	7	.....	.....	.....	.....	.....	.....	.....	3.60	.....	1.00	0	9	16[d]	4[d]	7[d]	s.	T. W. Bellamy.
Rockport **	Aransas	12	10	82.6	+ 0.2	89	11†	74	31	11	0.25	− 3.03	0.25	0	1	25	4	2	se.	Mrs. G. B. Grewe.
Rossville	Atascosa	558	4	86.2	.....	103	3†	70	29†	29	3.79	.....	3.73	0	2	19	12	0	se.	W. F. M. Ross.
Runge	Karnes	308	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Reiffert & Frobese.
Sabinal	Uvalde	964	7	87.0	.....	103	9†	70	10†	33	1.03	.....	0.83	0	2	9	14	8	se.	Jas. Johnston.
Salado	Bell	.....	1	.....	.....	.....	.....	.....	.....	.....	0.72	.....	0.72	0	1	16	0	15	s.	L. M. Crockett.
San Angelo	Tom Green	1,847	20	85.9	+ 3.8	104	6†	62	30	38	7.31	+ 4.42	4.95	0	4	19	8	4	s.	Sam Crowther.
San Antonio	Bexar	701	26	86.2	+ 4.2	102	12	67	31	28	0.48	− 2.21	0.30	0	2	21	8	2	se.	U. S. Weather Bureau.
San Augustine	San Augustine	360	2	82.0	.....	101	9	56	31	31	5.47	.....	2.81	0	9	15	7	9	.....	F. A. Wilson.
San Juanito	Hidalgo	.....	2	89.2[i]	.....	105	4†	64[r]	11	38[r]	1.17	.....	0.75	0	2	2	9	20	se.	J. B. McAllen.
San Marcos	Hays	588	18	85.3	+ 2.0	100	9†	64	31	29	1.65	− 0.03	0.69	0	3	22	0	9	s.	Miss L. C. Ford.
San Saba	San Saba	1,712	10	84.8	+ 1.5	106	15	61	31	35	3.83	+ 2.94	1.14	0	10	23	7	1	s.	Jas. Burns.
Santa Gertrudes	Nueces	.....	11	.....	.....	.....	.....	.....	.....	.....	0.25	− 2.04	0.25	0	1	.....	.....	.....	.....	J. B. Wright, jr.
Sealy	Austin	201	.....	.....	.....	.....	.....	.....	.....	.....	1.41	.....	0.72	0	5	18	8	5	s.	O. H. Albert.
Seymour	Baylor	1,320	5	82.0	.....	109	20	54	29	42	2.79	.....	1.76	0	5	17	0	14	.....	S. C. Lee.
Snyder	Scurry	.....	.....	82.6	.....	108	6	59	30	42	2.00	.....	0.72	0	8	17	5	9	se.	J. Allen Weaver.
Somerville	Burleson	251	2	86.8	.....	103	9†	63	31	32	0.87	.....	0.50	0	4	21	6	4	s.	W. A. Dolan.
Spur	Dickens	2,300	.....	81.7	.....	106	6	59	29	36	1.69	.....	1.00	0	5	23	6	2	s.	J. D. Reagan.
Stamford	Jones	.....	.....	81.9	.....	104	14†	60	29	30	5.36	.....	3.05	0	5	16	11	4	.....	T. A. Williams.
Stowell	Chambers	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.80	.....	0.80	0	4	22	0	9	s.	Arthur Bailey.
Sutherland Springs **	Wilson	.....	1	89.8	.....	107	16	64	31	37	3.37	.....	2.70	0	2	27	1	3	s.	W. A. Clark.
Taylor	Williamson	583	10	85.2	+ 3.5	101	9	65	31	29	2.41	− 0.06	2.13	0	3	22	8	1	s.	U. S. Weather Bureau.
Temple	Bell	630	21	85.9	+ 3.1	102	15†	67	31	25	0.64	− 1.28	0.45	0	3	19	7	5	.....	W. Goodrich Jones.
Theodore	Winkler	.....	1	.....	.....	.....	.....	.....	.....	.....	0.31	.....	0.10	0	5	.....	.....	.....	.....	W. H. Gibbs.
Thurber	Erath	.....	1	.....	.....	.....	.....	.....	.....	.....	3.43	.....	1.57	0	4	.....	.....	.....	.....	J. K. Ball.
Tilden	McMullen	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Kuykendall.
Tivoli	Refugio	.....	1	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	0	31	0	s.	W. H. Gisler.
Uvalde	Uvalde	937	3	88.0[i]	.....	107	17	69	10	35[i]	1.05	.....	1.02	0	2	8	22	1	se.	F. M. Getzendaner.
Valentine	Jeff Davis	4,421	5	76.9	.....	100	6†	52	29	37	0.98	.....	0.30	0	6	18	13	0	se.	Valentine Development Co.
Valley Junction	Robertson	289	11	.....	.....	.....	.....	.....	.....	.....	2.40	+ 0.40	1.05	0	3	23	0	8	s.	T. M. Williams.
Victoria	Victoria	187	12	87.2	+ 3.2	105	9	72	29†	30	0.31	− 2.57	0.31	0	1	29	2	0	s.	C. C. Zirjacks.
Waco	McLennan	424	22	87.4	+ 2.3	104	20	65	31	27	0.94	− 1.70	0.82	0	3	19	0	12	s.	E. H. Hall.
Waxahachie	Ellis	556	14	85.3	+ 1.1	108	20	60	31	32	2.83	+ 0.94	1.21	0	5	15	8	8	s.	C. D. Longserre.
Weatherford	Parker	864	22	84.4	+ 2.0	105	9†	64	30†	29	5.13	+ 3.06	2.06	0	9	20	4	7	n.	Miss J. Stickfort.
Wharton	Wharton	105	9	85.3	.....	105	12	60	31	32	0.12	.....	0.04	0	5	9	12	10	n.	Mrs. F. M. Hughs.
Wills Point	Van Zandt	524	6	86.0	.....	111	15	63	31	35	3.19	.....	1.45	0	6	17	2	12	s.	W. W. Gibbard.
Winters	Runnels	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.47	.....	0.72	0	5	.....	.....	.....	.....	Ed. P. Eason.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 8, Texas and Rio Grande Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Colorado.																															
Blanca	Rio Grande									T.	.01	.14				T.	.01	.03	.14	T.	.09	.08	.91	T.	T.		T.	.11				T.	1.52
Cumbres	do										.02	T.	.60				T.				.43	1.38	.32	.20	.26	T.	.03	.42	.18			.48	4.32
Garnett	do									.05											.23			.13			.47						0.88
Hermit	do		.03							T.	.10	T.	.02	.26	.08	.10	.19	.08	T.		.05	.30	1.52	T.	T.	T.	T.	.23	.07	T.		T.	3.03
La Veta Pass	do											.28					.03	.03	.03		.05	.28	.76	.21	.03	1.01	.08	.18	.04				3.01
Manassa	do																																
Platoro	do		T.								.01	.07	.06	.07	.01	T.	.06	.32	.04		T.	.61	1.27	.24	.06	.07	.04	.20	.25	.01	.03	.11	3.53
Saguache	do																																
San Luis	do	.04									T.	.26		.25		.25		.22	T.		.05	.77	.02	.13	.01	.02	.17	.13				2.32
Wagon Wheel Gap Exp. Station.	do		.16						.03	.40	.07		.16	.04	.02	T.		T.	T.		.04	.76	.76	.01	.06	T.		.45	T.	T.		.01	2.97
New Mexico.																																	
Agricultural College	Rio Grande											T.		T.	T.		T.	T.	T.	.09		.22	T.	.09	T.	.16	T.		.09	.03			0.14
Alamogordo (near)	do																T.					.29		.12		.18			.07		.02		0.59
Alamogordo	do		T.						T.		T.	T.	.05					T.	.30		.05	.05	.43	.22	.08	.02	.10	T.	.09				0.68
Alamos Ranch	do		T.								.09	T.	.06			.06							.34				.07						1.39
Albuquerque	do													T.	T.	T.	T.	.39					.55	.90		.32						0.62
Ancho	do											.02						1.00				.03		T.	*	1.00						2.16
Anchor Mine	do																							1.42	.04	.45		.03	.05			2.05
Artesia	Pecos										.02	.19				.21		.19	.21		.03	.64	.83	.49		.02		.24	.11			.01	1.99
Aspen Grove Ranch	Rio Grande										T.	.30	.17						.30			.48	1.12	.16	.14	T.		.30	.24				3.19
Batemans Ranch	do																			.05					.10				.08				3.21
Berino	do								T.		.04	.14	.08	.04	T.	T.	T.	T.	.05	.06	.25	.23	.85	.35	T.	T.	.08						0.23
Bluewater	do																						.66	.13		.77			.07				2.17
Boaz	Pecos										.02			.02		.08			.02	.12		.05	.08	.52	.13	.17			.02	.15		.10	1.63
Capitan	do															.24			.03				T.	.20	.12	.64		T.		T.			1.48
Carlsbad	do																					T.	T.	.15	.50	.34			.05				1.23
Carrizozo	Rio Grande										.15	.22	.30									T.	1.34		.20	.25		.30					1.04
Chama	do										.10			T.				T.	T.	.63	T.	T.	.20	.09	.09	.14	.09		.10	.04	.01		3.39
Cloudcroft	Pecos																		.20				.20				.40	.20					1.06
Corona	do														.03	.01	.01	.03	.01	.02		.01	.05	1.95	.12	.15			.03				0.60
Coyote	Rio Grande																				.11		.30	.40		.10							2.42
Cundiyo	do															.05	.15					.18	.26			.18		.40				0.91
Demonstration Farm.	Pecos																																1.22
Duran	do																																
Escondido	Rio Grande									T.	.03						T.	T.	T.				T.	T.	T.	.69			.13				0.82
Espanola	do																	.24	.16				T.	.34									0.37
Estancia	do						.18	.17											.05			T.	.01	.90		.21	.07	.12	.03	.34			1.88
Fort Stanton	Pecos									T.	.10												1.18	.33	.04	T.	T.						1.83
Fort Sumner	do											.12											.59	.54		.48			.12				1.55
Gallinas	do								T.		.20	T.		T.	T.	T.		.22	.55				.54	.35					.51	.01	T.	1.85
Gallinas Planting Station.	do																																2.38
Glorieta Ranch	Rio Grande													.02		.30					.16		.33	.04	.21	.81			T.				1.87
Harveys Upper Ranch.	Pecos		.05						T.		.31	T.	.12		T.	.08	.17	.19	T.			.22	.43	.64	T.			.17	.61	T.	.09		3.08
Hillsboro	Rio Grande													.01		T.	T.				.08		.12	.02		.45				T.			0.68
Hondo Reservoir	Pecos																						.03	.14		.84			.05				1.06
Jemez Springs	Rio Grande		T.									T.	.06		T.	T.	.17	.05	.02		.05	T.	.38	.60	.14	.02		T.	.10	.06	.03		1.68
Knowles	Pecos																							.25	.23	.05							0.53
Laguna	Rio Grande										T.						.15	T.				.35		.20			T.						0.70
Lagunita	Pecos																							2.15		.04							2.19
Lake Valley	Rio Grande						T.	T.	T.	T.	.01	T.	T.					.01		.01			.06		.20	.18		.04	T.	.11			0.62
Las Vegas	Pecos										.03	.80			.10			.22	T.				.23	.22	T.		.15	.38	.17				2.30
Liston	do																						*	.48									0.48
Los Lunas (near)	Rio Grande																																
Magdalena	do										T.		T.	T.	T.	T.	T.	T.	T.	.25	.18	.20	.49	.18	T.	.50	.20						2.00
Mescalero	do									T.	.02		T.	T.	T.				.23	.02		T.	.13	.41	.03		T.		.02	.07			0.93
Mineral Hill	Pecos																																
Monterey	Rio Grande																																
Mountainair	do										T.		.02	T.	T.	T.	T.	.30	.02	.04	T.		.12	.19	T.		.21	.12					1.10
Newman	do																								.46				.02				0.48
Noria	do																		26					T.	T.	.75							1.01
Orange	do																																
Orogrande	do																T.		T.				.13			.43			.06				0.62
Oscura	do													.01					.04	.12				.30		.31			.05				0.83
Otis	Pecos															T.			T.				T.	.20	.05	.76		T.	.04	T.			1.05
Otto	Rio Grande								T.		T.		.08			T.	T.	.07	T.		.02	T.	.07	.17	.02	.10			.36				0.95
Pastura	Pecos																		.23				.05	1.20	.06								1.54
Placitas (near)	Rio Grande		.16										.03					.46		T.			T.	.38		.05	.08						1.16
Plainview	Pecos												T.										T.		.30	.15	T.	.10	T.				0.55
Red River Canyon	Rio Grande											T.						1.00				*	.08	.08			T.	T.					1.16
Rincon	do																										.15	T.		.35			0.50
Rio Grande Dam	do													.08		T.	T.					.02	.37	T.		.23						0.70
Rio Grande Industrial School.	do																						.24	.14									0.38
Rosedale	do							T.						.03		T.		.02	.07	.07	.22	1.75	1.50	.27	.12	.12	T.		.33				4.50
Roswell	Pecos															.02							.10	.08		.96			.07				1.23
San Marcial	Rio Grande																																
San Rafael	do								T.	T.	.02	.18	.10	.08	T.			T.	.47	.36	T.	.05	T.	1.06	T.								2.32
Santa Fe	do		T.							T.	T.			T.	T.		.06		T.		.01	.01	.12	.15		.05	.03	.08					0.51
Santa Fe Canyon	do										.10	T.					T.				T.	T.	.30		T.	T.	.08						0.48
Santa Rosa	Pecos											.01		T.			T.		T.			T.	.04	1.23	.06	.71			.03				2.08
Socorro	Rio Grande											.05											.35	.06									0.46
Stanley	do														.32										.65			.52	.82				2.31
Strauss	do																								.59								0.59
Taft	Pecos															T.								2.40		.40			.22				3.02
Tajique (near)	Rio Grande												.26					.19	.90	.36			.15	.31	.19								2.36
Taos	do										T.	.05	.05	.04			.02	.17	.14	T.		.15	.75	.06	.21	.18							1.82
Taos Canyon	do										T.	.05	.13				.16	.23	.07	.04	T.	.03	.53	.41	.23	.30	.01						2.19
Tecolote	do		.29					.29							.07								.37	.69	.05	.15			.03	.41			2.35
Three Rivers	do																		.03				.12								.30		0.45
Tijeras Canyon	do												T.							.05			.15					.03					0.23
Torrance	Pecos										T.							T.	.09	.15			.40	.11		.55				T.			2.30
Tres Piedras	Rio Grande																																
Truchas	do																					.01	.70	.50	T.	.19	T.						1.40
Tularosa	do																																
Vaughn	Pecos																		T.			.50	T.	1.00		T.		.05	.45	.42			2.42
Virsylvia	Rio Grande									.06		.14	.07					.03	.01	.40	.18	.57	1.00		.03	.19		.13					2.81
Winsors	Pecos											.03	.01			.03	.25	.17	.18				.24	.43	.09				.85				2.28

TABLE 2.—*Daily precipitation for August, 1911. District No. 8*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas.																																	
Abilene	Brazos		.19	.31	T.							T.						T.	.07						.74	.13	.16	1.23				2.83
Albany	do	.05	T.	T.	.07																			T.		.38	.08		3.01				3.59
Alice ‖	Coast																																0.00
Alpine	Pecos			.02																						1.63	.02						1.67
Alvin	Coast		.29										.11		T.			.48	.07														0.95
Anahuac	do		.22									.80			.18			.17	.13					.39				.26		.46			2.61
Antelope	Trinity											T.												.09				1.31	1.31				2.71
Aspermont	Brazos	.10	.18																										1.44				1.72
Austin	Colorado																T.									.22			T.				0.22
Ballinger ‖	do	1.05	1.02																							.22	.90	1.00	T.	.88			5.07
Barstow	Pecos																																0.00
Bay City ‖	Colorado																									T.							T.
Beaumont ‖	Neches		.49									.04	T.	T.		.07				.37					.06		.39	.02	.45	.59			2.48
Beeville ‖	Coast																													T.			T.
Big Springs	Colorado	.06																						.14		.10	.01		.06				0.37
Blanco ‖	Guadalupe																30									.05	.47						0.82
Boerne	San Antonio											.08				.20									.57	.20							1.05
Booth ‖	Brazos																		.05	.07								.13	.15				0.40
Bowie	Trinity				.29							.16						.27	.48				.13	.02					3.33				4.68
Brady	Colorado															.23			1.10									.23	1.80				3.36
Brazoria	Brazos												.03	.40					T.	.67	.10			T.	.07		.03						1.30
Brazos ‖	do																	1.42							3.00	.35			2.18	.16			7.11
Brenham ‖	do											.05	T.		T.											T.	.70	T.	T.	.03	.10			0.88
Bridgeport ‖	Trinity			.07	T.							.04						2.20	.05					.20					3.00	.20			5.96
Brighton	Coast																																0.00
Brownsville	Rio Grande																		T.														T.
Brownwood ‖	Colorado	.38	.32																.07						.03	.75	.20	.08	.25	2.55			4.63
Cameron ‖	Brazos																																
Carmona	Neches	T.									T.	T.		T.		.57	.27			T.				.01		.22	.05	.65	.01	T.			1.78
Claytonville	Brazos	1.10																						.20		3.30	.06	1.20					5.86
Clifton	do																								.32		.08		1.42	.04			1.86
Coleman	Colorado		.40															T.		T.					T.	.44			1.73				2.57
College Station	Brazos										.20	.08			.25				.06						.10	1.78		.12	.05				2.64
Colorado	Colorado		.25																					.42		1.40		.01	.90				2.98
Columbia	Brazos												.30								.70												1.00
Columbus ‖	Colorado																.14									.04			.04	.34	.42		0.98
Corpus Christi	Coast																																0.00
Corsicana ‖	Trinity		.30																						.03	.03	.02		.06	.30			0.74
Cotulla	Nueces																																
Crockett	Trinity	.11										T.		T.			.92									.90	.03	.10	.11	.10			2.27
Cuero ‖	Guadalupe																										3.25		.09	.04			3.38
Dallas ‖	Trinity												.38							.19		.25			1.24	.03			1.59	.46			4.14
Danevang	Coast	.10																															0.10
Decatur	Trinity																																
Del Rio	Rio Grande												T.		.04		T.								1.04				.06			T.	1.14
Devine	Nueces												T.	T.																2.00	.21		2.21
Dialville	Neches	.30																						.08	2.75		.95	T.	T.				4.08
Dilley	Nueces																													.80	.20		1.00
Dublin ‖	Brazos		.03																.07						1.91	.66	.09		2.03	1.06			5.85
Duval	Colorado										T.	T.		.05		T.	T.									.56			T.				0.61
Eagle Pass	Rio Grande														.08	T.													1.20		.85		2.13
Eastland ‖	Brazos	T.	T.	T.	T.													T.	T.		T.				.50	.40	.22	T.	1.20	.26			2.58
Edna	Lavaca											.10														.25				.64			0.99
El Paso	Rio Grande										T.					T.	T.			T.			.02	.05		.38							0.45
Encinal	Nueces																																
Eola	Colorado																								1.50			1.55					3.05
Fairland	do											T.				.07	.10	T.	T.						T.	2.85	T.		.10				3.12
Falfurrias	Coast										.67				T.									T.									0.67
Flatonia	Guadalupe											.13													.03	T.	.18			1.23			1.57
Flint	Neches	.86															1.86							.04		.77		.14	.04	T.			3.71
Floydada	Brazos	.01																						.06				.07					0.14
Fort Clark ‖	Rio Grande																																
Fort McIntosh	do																													.52			0.52
Fort Stockton	Pecos			T.									T.						T.					T.		.50	.85	.07	T.				1.42
Fort Worth	Trinity																			.01				.05	.03	.18			2.08	.04			2.39
Fredericksburg	Colorado													T.		.04			T.							1.33				.06			1.43
Gainesville	Trinity				.60							.16							.20			.20	.05	1.33				.53	3.01				6.08
Galveston	Coast	.01								T.		.80	.16	.88			T.		.17	.10			T.	1.04	T.	.85	1.45	T.		.02			5.48
Gatesville	Brazos																												30				0.30
Georgetown ‖	do																										.77				.02		0.79
Gonzales ‖	Guadalupe																									.07	.08			.27	.28		0.70
Gorham ‖	Brazos											T.						T.						.23		T.			42				0.65
Graham	do	T.	T.	.02								.19	T.											.45	T.			1.05	.96				2.67
Grand Falls	Pecos																										.46						0.46
Grand Saline	Sabine	.69															1.15				T.		T.	.08	1.80	T.	T.	.35	T.				4.07
Grapevine	Trinity												.02				.01				T.			.89	T.	.17		T.	1.85	.03			2.97
Greenville ‖	Sabine		.10										.05					T.							.30				.60				1.06
Hallettsville	Lavaca											T.		.73					T.						T.		T.	T.		.39			1.12
Hamlin	Brazos																										.36	.10					0.46
Harlingen	Coast																																0.00
Harper	Colorado		.30														T.		T.							1.16	.25		.12				1.83
Haskell ‖	Brazos				1.60																				.10				1.40				3.10
Hebbronville	Coast																														.32		0.32
Hempstead ‖	Brazos											.50	.60		.30				T.						T.	.40		T.		1.98			3.78
Henderson	Neches	.37										.30			T.	.16	.31	.18		.05				.02		T.		1.50	.06	.07			3.02
Hewitt	Brazos											.12													.09	.47	T.		T.				0.68
Hico	do																	.01	.85						.68	T.		T.	2.15	.23			3.92
Hillsboro	do																								.19				1.16	.65			2.00
Hondo ‖	Nueces																													.25	.30		0.55
Houston	Coast		.02									.57		.36					.13	.06				.51			T.	.09	.01	.12			1.87
Huntsville ‖	Trinity		T.										T.							.48							T.		.21	.26	T.		0.95
Jayton	Brazos																												1.45				1.45
Jewett ‖	Trinity													T.		.10		.25						T.	T.	.25		.75	T.				1.35
Junction	Colorado																										.50			.60			1.10
Kaufman	Trinity	T.										T.								T.				T.	.32				1.11	.11			1.54
Kerrville ‖	Guadalupe																.14									.28	1.77						2.19
Knickerbocker	Colorado			T.										.05			.05							T.	T.	1.92	.10	1.12	T.				3.24
Kopperl ‖	Brazos		T.		T.								.40												.20				.70	.75			2.06
Lagrange	Colorado													1.04			.16								.20	.04				.44			1.88
Lamesa	do																								.25	.15			.05				0.45
Lampasas ‖	Brazos												T.			T.										.73				.34			1.07

TABLE 2.—*Daily precipitation for August, 1911. District No. 8*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas—Continued.																																	
La Parra	Coast																																0.00
Laureles Ranch	do																														.25		0.25
Liberty ‖	Trinity		1.00	T.								T.	.44			T.			T.						T.			T.	.50	.51	.09		2.54
Llano ‖	Colorado	.18	T.												T.		.20	.07	T.	T.	T.					.07				.65			1.17
Llano Grande ‖	Rio Grande																																0.00
Long Lake ‖	Trinity		.37																								1.25	.16		.15			1.93
Longview ‖	Sabine		.15										.04			.77	.60	.78		.21							1.50		.25	1.30	.30		5.90
Lubbock	Brazos																							T.	.12			.09	T.				0.21
Lufkin	Neches	T.										T.	.15			.10	1.31							.68			.31						2.55
Luling ‖	Guadalupe												.04				.11	.02								T.	.06			.12	1.00		1.35
McGregor	Brazos																							.20									0.20
Marathon	Rio Grande																									.97	1.00	.45	T.				2.42
Marble Falls ‖	Colorado																										1.50						1.50
Marfa	Rio Grande									.30																20							0.50
Marshall	Sabine	.40									.32	.17				.99	.12	.08		.33						.62	.04		.93	.60			4.60
Matagorda	Coast																								31	1.02							1.33
Mexia ‖	Brazos																T.								T.	T.	.05	.02	T.	.25	T.		0.32
Midland	Colorado																				.15		.17										0.32
Mission ‖	Rio Grande										.03																					1.57	1.60
Mont Belvieu	Coast		1.21	T.															39	.15			.07					2.82					4.64
Mountain View	Pecos																							T.		.49	.35		T.				0.84
Mount Blanco	Brazos		.32	.20																				T.									0.52
Nacogdoches ‖	Neches		.10														1.12								.36					.51	T.		2.09
New Braunfels	Guadalupe																			T.					1.11					.07			1.18
Palestine	Trinity	.10												T.		T.										2.88	.01		.01	.01			3.01
Panter	Brazos	T.													T.	T.	T.			T.				.82	.20	.41		T.	1.93	.12			3.48
Pearsall	Nueces																												2.77	.07			2.84
Pierce	Colorado																										.50			.15			0.65
Plainview	Brazos	T.	.64																				.03	.28	.04				.04				1.03
Port Arthur	Coast										.30	.35					.75	2.75	.25		.65				.50	.50							6.05
Port Lavaca	do													T.																T.	T.		T.
Post City	Brazos		.32																				.29						.95				1.56
Putnam	do		.64																	.03				.40		1.09	.48		2.07				4.71
Raymondville ‖	Coast																			.30												.13	0.43
Ricardo	do																			T.							.04				1.26		1.30
Riverside ‖	Trinity		.10										T.														T.		.60	.65			1.35
Robert Lee ‖	Colorado																																
Rockland ‖	Neches	1.00												.60			.20	.20			.20					.20		.10	.60		.50	T.	3.60
Rockport	Coast																														25		0.25
Rossville	Nueces											T.	T.	.06															3.73				3.79
Runge	San Antonio																																
Sabinal	Nueces															.20													.83				1.03
Salado	Brazos																							.72									0.72
San Angelo	Colorado												T.					T.	T.							4.95	.97	.19	1.20				7.31
San Antonio	San Antonio													T.											18					.30			0.48
San Augustine	Neches	.27											.01	.37		.58	2.81							.04			.08	1.30	.01	T.			5.47
San Juanito	Coast										T.	.42																			.75		1.17
San Marcos ‖	Guadalupe														.30												.66	.69					1.65
San Saba	Colorado		.80													.06		.05	.57	.12					.93	.04	.09		1.14	.03			3.83
Santa Gertrudes ‖	Coast																															.25	0.25
Sealy	Brazos											.03		T.										.12		T.	.02	.72		.52			1.41
Seymour	do		.19	T.	.20							.44													.20				1.76				2.79
Snyder ‖	Colorado	.03	.21																						.06	.72	.26	.02	.65	.05			2.00
Somerville	Brazos										.23	.01												.50			.13			T.			0.87
Spur ‖	do		.13																					.01	.40	.15			1.00	T.			1.69
Stamford	do			1.45																						.05	.68	3.05	.13				5.36
Stowell	Coast		.20									.25	.80															.55					1.80
Sutherland Springs	San Antonio																									.67				2.70			3.37
Taylor	Brazos											T.				T.	.23									2.13			.05				2.41
Temple ‖	do																	.18								.01	.45						0.64
Theodore	Pecos												.06										.10			.09	.01		.05				0.31
Thurber	Brazos																	.40							48	.98			1.57				3.43
Tilden	Nueces																																
Tivoli ‖	Guadalupe																																0.00
Uvalde	Nueces												T.	T.		1.02													T.	.03			1.05
Valentine	Rio Grande							.30								.25			.01	.08				.10	.24			T.					0.98
Valley Junction ‖	Brazos																.50										.85	1.05					2.40
Victoria ‖	Guadalupe																													.31			0.31
Waco ‖	Brazos											T.												.12			.32	.50					0.94
Waxahachie ‖	Trinity		T.										.02						.05						1.21			1.09		.46			2.83
Weatherford ‖	do		.04										T.					.37	.13	T.					2.00	.41	.03	.04	2.06	.05	.03		5.13
Wharton ‖	Colorado																			.01	.03								.04	.01			0.12
Wills Point	Sabine	1.45															.25			.15					.40				.40	.54			3.19
Winters	Colorado	.72	.69																							.53	.25		.28					2.47

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 8, Texas and Rio Grande Valley.*

Date.	Colorado.				New Mexico.														Texas.							
	Garnett.		San Luis.		Agricultural College.		Carlsbad.		Fort Stanton.		Mountain Air.		Rosedale.		Roswell.		Santa Fe.		Santa Rosa.		Abilene.		Big Springs.		Brownsville.		Corpus Christi.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	81	38	77	40	100	60	99	65	90	46	94	55	85	62	97	65	82	53	98	59	94	66	103	71	92	76	86	78
2....	82	40	75	46	96	56	100	64	87	47	89	55	83	64	97	61	80	55	96	58	93	69	100	70	92	76	88	78
3....	81	40	78	41	96	63	99	71	88	58	81	56	83	62	97	68	80	55	97	64	97	75	105	81	92	78	87	78
4....	83	37	79	38	98	62	100	60	92	55	89	55	85	65	99	60	81	52	98	63	95	76	108	77	93	77	87	79
5....	84	38	81	39	99	56	103	60	95	44	79	53	85	61	102	59	82	48	100	60	99	77	109	77	92	78	87	79
6....	83	36	78	42	100	56	101	59	92	42	94	56	87	57	101	56	83	53	99	54	100	78	107	75	92	76	87	78
7....	87	38	83	40	103	62	104	61	96	43	97	55	88	58	102	58	85	54	103	56	99	76	106	75	92	80	88	79
8....	85	45	85	42	101	63	98	62	93	50	94	57	87	60	99	60	87	56	104	63	100	77	106	75	97	77	89	78
9....	82	45	84	42	99	66	99	64	93	50	97	55	86	60	99	60	87	65	100	58	101	77	105	76	95	73	88	76
10....	83	43	81	45	99	64	97	67	90	53	96	57	84	56	97	60	83	58	101	66	101	73	105	75	94	72	87	73
11....	76	47	79	50	96	65	95	60	86	52	92	54	83	56	94	57	81	58	97	63	99	74	102	74	95	72	89	77
12....	81	44	76	43	95	65	94	65	86	50	80	53	80	55	95	59	78	56	97	58	97	73	101	73	96	72	92	76
13....	84	45	80	47	97	72	99	65	88	49	83	54	85	56	97	61	81	55	100	62	99	73	104	73	94	76	88	77
14....	87	45	85	42	101	69	98	64	92	51	96	56	85	58	101	60	85	56	102	65	103	76	106	71	94	78	88	79
15....	84	46	84	40	99	68	101	70	91	58	95	59	87	61	98	65	84	63	102	64	101	73	106	69	95	76	89	77
16....	85	43	85	45	99	70	95	67	91	52	97	55	87	62	97	62	84	60	100	68	95	80	102	69	95	76	88	77
17....	86	44	85	42	97	67	97	65	91	54	92	57	86	60	96	63	79	59	97	65	95	77	101	69	94	76	89	77
18....	85	47	82	45	98	73	97	67	91	58	89	55	86	59	98	66	83	57	98	62	96	78	103	75	94	76	88	78
19....	87	43	86	44	97	65	98	65	92	53	91	55	86	59	98	64	83	58	101	62	99	74	105	71	95	76	88	78
20....	84	47	79	47	98	68	99	64	91	51	96	57	85	58	98	62	83	60	102	61	100	77	105	76	96	76	90	77
21....	77	48	80	48	96	74	104	67	91	55	93	55	81	52	101	63	84	56	102	65	101	78	105	77	94	78	88	77
22....	73	44	80	48	91	70	94	70	78	56	68	54	71	55	85	62	64	54	87	58	100	78	102	76	94	76	87	78
23....	71	40	71	49	87	65	87	62	65	53	67	49	67	54	67	57	71	52	62	52	95	74	91	70	95	74	88	77
24....	72	40	72	43	90	63	84	65	80	55	73	52	73	49	82	60	75	51	88	51	82	66	86	62	96	74	86	77
25....	74	37	71	44	87	64	81	63	70	54	84	53	68	50	73	60	72	51	79	56	75	65	86	62	95	73	87	76
26....	63	40	74	37	84	62	83	66	80	48	72	51	75	49	86	61	76	50	89	55	84	67	88	63	94	76	87	76
27....	80	38	59	43	91	62	91	64	85	50	81	49	76	53	88	62	70	53	88	56	89	70	92	67	93	78	89	81
28....	81	36	70	36	85	60	85	66	70	56	85	47	67	49	71	62	69	47	69	56	70	67	88	65	96	76	89	79
29....	82	35	76	36	86	58	83	65	76	47	87	51	75	48	81	63	72	46	85	58	79	63	82	62	96	72	87	77
30....	83	35	78	39	90	60	87	57	81	45	84	47	77	51	86	56	79	53	92	54	85	63	92	58	90	74	86	77
31....	82	36	80	40	92	62	90	58	82	43	89	47	79	53	89	54	80	55	93	54	88	64	96	65	93	69	89	75
Mns..	80.9	41.3	78.5	42.7	95.1	64.2	94.9	64.1	86.2	50.9	87.2	53.7	81.0	56.5	92.6	60.8	79.5	54.8	94.4	59.5	93.9	72.7	99.9	70.9	94.0	75.4	87.9	77.4

Date.	Texas.																									
	Del Rio		El Paso.		Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Hallettsville.		Houston.		Lufkin.		Palestine.		Plainview.		San Antonio.		Seymour.		Taylor.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	101	78	99	67	104	77	104	70	99	75	87	75	99	75	92	73	96	68	90	69	89	61	98	[illegible]	98	65	98	75
2....	100	78	95	74	105	77	101	71	95	73	87	79	100	76	94	72	95	65	90	65	89	59	97	[illegible]	97	63	96	77
3....	102	78	95	75	107	77	106	74	92	76	88	81	100	76	94	75	96	70	92	75	92	67	99	[illegible]	100	70	97	76
4....	102	78	96	71	107	78	108	72	92	77	88	82	99	78	94	75	95	72	91	75	93	62	99	[illegible]	93	71	97	76
5....	101	77	97	70	105	77	109	72	95	75	87	81	100	76	93	76	95	73	92	74	93	65	98	[illegible]	92	70	97	75
6....	103	79	100	69	106	77	107	72	97	75	88	82	99	77	93	75	96	72	94	73	98	64	99	[illegible]	106	72	98	76
7....	102	77	102	73	106	78	105	73	99	73	88	81	102	76	96	74	97	72	94	74	95	61	100	[illegible]	107	70	99	75
8....	102	76	100	71	106	77	102	72	101	75	88	80	102	76	96	74	98	72	96	74	94	59	100	[illegible]	106	71	99	72
9....	103	77	98	74	105	76	102	68	103	76	92	79	102	75	98	74	100	70	99	75	95	59	102	[illegible]	107	66	101	72
10....	104	72	98	70	106	75	102	70	102	78	88	80	100	74	96	74	100	70	97	76	95	58	101	[illegible]	107	67	99	76
11....	102	76	94	69	103	76	98	66	99	79	92	69	101	76	96	69	97	73	98	75	93	58	100	[illegible]	105	65	98	76
12....	104	78	92	72	106	75	100	65	95	73	91	76	101	75	95	75	95	70	91	73	93	58	102	[illegible]	97	65	96	72
13....	106	76	96	70	105	77	101	65	100	75	85	73	102	77	94	75	97	70	95	74	94	61	100	[illegible]	102	60	100	75
14....	105	80	98	72	106	79	104	68	106	77	86	80	99	78	96	75	98	70	97	75	99	61	100	[illegible]	106	66	101	75
15....	103	79	98	71	105	78	104	68	99	77	88	82	100	77	96	75	99	75	98	75	96	63	101	[illegible]	102	70	101	76
16....	104	72	94	75	105	77	102	64	89	78	88	82	100	78	93	76	95	71	94	75	95	60	100	[illegible]	98	65	99	76
17....	102	78	96	73	105	78	101	61	92	76	88	81	101	76	95	76	98	73	94	76	94	61	99	[illegible]	96	67	97	75
18....	101	79	96	77	105	79	99	69	102	77	87	77	100	77	92	75	96	73	96	75	95	64	99	[illegible]	101	66	98	76
19....	102	79	97	75	104	77	101	70	103	78	87	78	101	79	93	75	97	72	96	74	99	62	99	[illegible]	108	69	100	77
20....	103	79	96	73	106	79	101	68	105	78	90	81	101	77	96	76	100	74	100	75	98	63	100	[illegible]	109	71	101	76
21....	105	78	94	74	106	77	106	70	101	79	87	80	102	77	95	75	98	73	97	75	100	65	100	[illegible]	108	75	100	76
22....	104	78	90	69	107	72	101	75	101	77	88	80	103	75	95	74	97	74	94	73	92	64	101	[illegible]	101	73	99	74
23....	102	78	88	67	104	77	97	69	99	74	86	74	100	75	93	75	90	72	90	76	72	56	99	[illegible]	96	68	97	74
24....	103	76	86	67	105	78	88	67	80	71	86	77	97	75	90	73	91	72	88	73	78	55	98	[illegible]	83	56	93	74
25....	101	72	78	63	104	71	85	65	79	66	92	72	99	76	93	74	93	71	88	68	78	56	94	[illegible]	84	59	89	70
26....	98	72	86	63	103	76	89	65	89	70	85	73	98	76	91	73	94	72	88	71	92	56	96	[illegible]	90	65	91	70
27....	103	78	88	67	105	74	93	66	91	75	88	81	98	76	88	74	88	72	91	73	92	60	98	[illegible]	94	75	96	76
28....	95	75	86	65	107	74	79	68	80	68	88	81	97	76	94	74	98	72	85	74	79	57	94	[illegible]	75	76	59	88	73
29....	89	73	84	66	106	69	79	64	80	67	84	75	86	74	81	71	88	72	78	71	81	55	86	[illegible]	70	82	54	83	71
30....	96	72	88	65	95	70	89	57	85	66	82	73	89	72	84	71	85	67	84	67	90	53	91	[illegible]	70	90	62	87	72
31....	99	73	88	66	99	67	93	60	89	65	87	75	92	72	90	68	88	56	89	60	93	55	93	[illegible]	93	67	93	60	89	65
Mns..	101.5	76.5	93.3	70.1	104.8	75.8	98.6	67.9	94.8	74.2	87.6	78.1	99.0	75.9	93.1	73.9	95.2	70.9	92.5	72.8	91.5	59.9	98.2	[illegible]	97.8	66.3	96.3	74.2

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

The month was cooler than the average, making the fifth consecutive month in the Colorado Basin with mean temperatures below the normal. The seasonal summer showers that were a feature of July, and which ceased abruptly near the end of that month, began anew in Arizona on the 8th. These conditions spread over the district the following day, and although the showers continued almost to the end of the month, the daily amounts were, as a rule, so small that on the whole the monthly values fell short of the normal on all the subdrainage areas.

TEMPERATURE.

The mean of the 149 stations reporting was 72.8°, or 0.5° below the normal. By subdivisions the means and departures were: Western Wyoming, 59.2°, −0.6°; western Colorado, 62.3° −1°; eastern Utah, 70.3°, −0.1°; western New Mexico, 72.6°, −0.2°; Arizona, 79.6°, −0.3°; and southeastern Nevada, 77°. The highest monthly mean was 95° at Mohawk Summit, Ariz., and the lowest, 49.7°, at Fraser, Colo. The first 13 days were cooler than the normal; temperatures above the normal followed till the 21st. The remainder of the month, except the last day, was generally cool. A reading as high as 100° was not reached in Wyoming or Colorado; that temperature or higher occurred at several stations in Utah and New Mexico and at the majority of stations in Arizona. Freezing temperature was generally noted in Wyoming and at a number of high level stations in Colorado, and one in Utah and Arizona. By subdivisions the extremes were: Western Wyoming, 94° at Green River and 21° at Daniel; western Colorado, 99° at Fruita and Grand Valley and 20° at Fraser; eastern Utah, 106° at Hite and 24° at Scofield; western New Mexico, 105° at Gage and 36° at Aragon and Dulce; Arizona, 120° at Mohawk Summit and 32° at Springerville; southeastern Nevada, 110° at Logan and 36° at Caliente.

PRECIPITATION.

The average for the 197 stations reporting was 1.42 inches, or 0.46 inch below the normal. The average for August, 1910, was 1.69 inches. By watersheds the means and departures were: Green, 0.69, −0.26; Grand, 1.44, −0.32; San Juan, 1.94, −0.11; Little Colorado, 1.44, −0.52; Gila, 1.83, −0.57; Mimbres, 1.08, −1.15; and Colorado, proper, 0.59, −0.54 inch. The greatest monthly amount was 5.78 inches at station near Silverton, Colo. Falls of an inch or more in 24 hours were confined principally to Arizona, and occurred mostly at the beginning of the third decade. By subdivisions the greatest and least monthly amounts were: Western Wyoming, 1.23 at Rambler and 0.02 at Pinedale; western Colorado, 5.78 near Silverton and 0.35 at Grand Junction; eastern Utah, 2.24 at Monticello and none at Price and Emery; western New Mexico, 4.61 at Pinos Altos and 0.09 at Columbus; Arizona, 5.32 at Jerome and none at Aztec, Gilabend, Mohawk Summit, Parker, Quartsite, and Yuma No. 1; southeastern Nevada, 0.01 at Caliente and none at Logan.

The average number of days with 0.01 inch or more precipitation was 3 in western Wyoming; 9 in western Colorado; 4 in eastern Utah; 6 in western New Mexico; and 6 in Arizona; and for the district as a whole 6 days.

TABLE 1.—*Climatological data for August, 1911. District No. 9, Colorado Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Wyoming.																				
Battle Mountain	Carbon	7,300																		Forest ranger.
Daniel	Uinta	6,740	12	54.4	− 0.2	85	17	21	22	55	0.30	− 0.69	0.30	0	1	22	9	0	nw.	J. M. VanDervort.
Eden	Sweetwater	6,577	2	61.4		90	18	31	25	49	0.44		0.42	0	2	23	8	0	w.	Eden Valley L. & I. Co.
Green River	do	6,083	6	64.5	− 1.1	94	17†	33	25	49	0.04	− 0.50	0.03	0	2	19	10	2	w.	Geo. W. Maxom.
Merna	Uinta																			Forest ranger.
Pinedale	Fremont	7,167	5	56.5[e]		87	17†	24	23	63[e]	0.02		0.02	0	1	22	4	0	nw.	Forest supervisor.
Rambler	Carbon	9,232	1								1.23		0.55	0	7	10	15	6	nw.	Forest ranger.
Willow Creek Cabin	Fremont	7,500	2																	Do.
Colorado.																				
Ashcroft	Pitkin	9,483	9	52.9		80	8	29	3	44	2.02		0.49	0	17					Dan McArthur.
Breckenridge	Summit	9,536	22	50.2[e]	− 3.2	78[e]	19	22[e]	27	46[e]						3[e]	17[e]	8[e]	nw.	Mrs. J. G. Thompson.
Buford	Rio Blanco										1.31		0.41	0	7	25	4	2	w.	Mrs. H. Genier.
Cascade	San Juan	8,900	4								2.47		0.55	0	15	11	11	9		San Juan W. & P. Co.
Cedaredge	Delta	6,175	13	69.2	+ 0.4	92	17†	47	3†	36	1.06	+ 0.04	0.63	0	6	20	9	2		Harry A. Cobbett.
Chromo	Archuleta	7,500	5	58.6		89	19	31	6†	52	3.03		1.30	0	7	14	11	6	sw.	Lawrence Nolan.
Cochetopa	Saguache	9,088	2								3.09		0.86	0	12	8	11	12	w.	Miss Bessie McDonough.
Colibran	Mesa	6,000	18	66.2	− 1.6	89[b]	19	43[b]	3†	37[b]	0.90	− 0.46	0.39	0	8	19[b]	10[b]	0[b]	sw.	A. A. Wood.
Columbine	Routt	8,766	1								1.57		0.35	0	9	10	21	0	sw.	Mrs. M. A. Caron.
Columbine Ranch	Delta	6,925	1								1.81		0.40	0	8	15	8	8	s.	Geo. W. Wade.
Corona	Grand	11,660	4								2.25		0.50	0	10				w.	U. S. Weather Bureau.
Cortez	Montezuma	6,100	4																	Wm. C. Syrett.
Craig	Routt			65.8[e]		98[e]	17†	30[f]	26	60[e]				0						Joseph F. Haubrich.
Crawford (near)	Montrose	6,600	1	66.0		86	18†	43	3	34	1.07		0.28	0	11	18	12	1		C. W. Roe.
Crested Butte	Gunnison	8,867	1	52.4		79	18	24	3	48	1.54		0.40	0	9	14	12	5		Charles L. Ross.
Delta	Delta	4,965	21	70.2	− 2.1	98	15	40	5	52	0.55	− 0.39	0.32	0	6	21	10	0		E. M. Getts.
Dillon	Summit	8,800	1	53.0		81	8†	25	27	55	0.96		0.20	0	7	17	11	3	n.	Harry T. Hamilton.
Durango	La Plata	6,534	16	65.0	− 1.3	89	19	41	28	43	2.89	+ 1.09	1.37	0	15	14	14	3	nw.	U. S. Weather Bureau.
Eureka	San Juan	10,000	4								1.31		0.30	0	8	16	4	11		San Juan W. & P. Co.
Fraser	Grand	8,560	2	49.7		77	7†	20	26	50	1.88		0.62	0	10	4	15	12	w.	L. D. C. Gaskill.
Fruita	Mesa	4,510	12	72.6	− 0.8	99	17	44	29	49	0.98	− 0.21	0.42	0	5	21	9	1		J. B. Willsea.
Gladstone	San Juan	10,400	4								2.23		0.76	0	13	3	23	5		San Juan W. & P. Co.
Glenwood Springs (near)	Garfield	5,823	13	64.2	− 2.4	92	18	36	1	52	0.79	− 0.58	0.50	0	4	27	4	0	w.	E. A. O'Neil.
Grand Junction	Mesa	4,608	20	75.8	− 0.3	97	17	54	3	35	0.35	− 0.69	0.11	0	6	19	8	4	se.	U. S. Weather Bureau.
Grandlake	Grand	8,153	3								2.00		0.80	0	4	17	13	1	w.	Mrs. Belle Kauffman.
Grand Valley	Garfield	5,089	19	69.5	− 1.9	99	17†	41	3†	50	0.88	− 0.12	0.33	0	7	19	10	2		David Evans.
Gunnison	Gunnison	7,670	18	56.9	− 2.8	84	15	29	29	50	1.11	− 0.23	0.30	0	10	11	14	6	sw.	Clarence Adams.
Horsefly	Montrose	8,700	1																	Lawrence J. Finch.
Ironton	Ouray	10,000	1								2.15		0.32	0	19	3	27	1	sw.	P. H. Foley.
Lake City	Hinsdale	8,686	6	58.2		82	8†	33	28	39	2.06		0.65	0	17	6	13	12	s.	J. F. Maurer.
Lay	Routt	6,190	17	64.4	− 1.3	94	19	30	25†	52	0.41	− 0.46	0.25	0	3	16	9	6	sw.	A. G. Wallihan.
Mancos	Montezuma	6,900	12	64.0	− 0.6	88	19	39	3	40	1.82	− 0.68	0.72	0	7	17	14	0	w.	B. M. Krumpanitzky.
Marble	Gunnison	7,951	2	58.2		90	17	30	7	52	0.84		0.55	0	5	19	10	2	ne.	F. E. Morse.
Marshall Pass	Sagauche	10,846	8								2.46		1.50	0	6	19	11	1	w.	Wm. D. Lillard.
Meeker (near)	Rio Blanco	6,182	19	61.8	− 2.2	87	19	35	24†	43	1.67	+ 0.08	0.58	0	7	20	8	3	sw.	T. Baker.
Montrose	Montrose	5,811	22	69.2	+ 2.0	92	17†	43	28	43	0.78	− 0.59	0.28	0	7	17	13	1		U. S. Recla. Service.
Nast	Pitkin	7,953	1	54.4		80	19	31	25†	43	1.54		0.38	0	6	17	12	2	w.	Arthur Hanthorn.
Pagoda	Routt	6,500	20	62.2	− 1.3	90	17	33	3	47	2.18	+ 0.63	0.70	0	7	24	6	7		Mrs. J. W. Scott.
Pagosa Springs	Archuleta	7,108	4	60.0		88	19	32	7†	53	2.80		1.15	0	12	11	18	2	sw.	E. T. Walker.
Palisade	Mesa	4,729	4	75.7		97	17†	54	28	33	0.51		0.22	0	6	20	11	0	sw.	G. S. Herbolsheimer.
Paonia	Delta	5,694	16	67.2	− 4.0	89	15	46	3†	39	0.93	− 0.29	0.32	0	5	12	17	2	sw.	J. M. Underwood.
Parshall	Grand		2								2.14		0.70	0	6					F. A. Field.
Pitkin	Gunnison	9,500	2								1.68		0.83	0	8	13	12	6		Mrs. Maggie Cammann.
Pyramid	Rio Blanca			59.8		85	19	33	3†	45	1.07		0.19	0	11	11	18	2	w.	E. E. Egry.
Rangely	do	5,050	12	71.2[b]	+5.7	98[b]	19	42[b]	26	46[b]				0					w.	Mrs. C. P. Hill.
Redcliff	Eagle	8,695	18																	Dorothea Greiner.
Rico	Dolores	8,824	9								1.65		0.33	0	9	22	9	0	sw.	Clinton B. Smith.
Rifle	Garfield	5,437																		Herman Eiche.
River Portal	Montrose	6,570	5	66.4		94	17	41	29	46	1.09		0.39	0	7	21	2	8		U. S. Recla. Service.
Sapinero (near)	Gunnison	8,125	8	56.6		82	19	32	28†	42	1.42		0.30	0	10	19	6	6	w.	W. F. Irving.
Shoshone	Garfield	6,110	1	68.6		93	19	47	25†	37	1.95		0.59	0	12	16	3	12		Central Colo. Pow. Co.
Silverton (near)	San Juan	9,400	4	53.0		80	8	25	9	46	5.78		0.90	0	16	7	19	5	sw.	San Juan W. & P. Co.
Spruce Lodge	Grand	9,600	3								3.17		0.55	0	17					H. J. Wills.
Steamboat Springs	Routt	6,683	8	58.2		88	19	25	25†	58	1.16		0.60		3	26	2	3		M. Elliot Houston.
Tacoma	La Plata	7,300	4								2.31		0.56	0	9	4	12	15	sw.	San Juan W. & P. Co.
Telluride	San Miguel			56.4		81	16†	30	27†	44	2.08		0.30	0	16	16	8	7	w.	Wm. T. March.
Terminal Dam	La Plata	8,300	4								1.27		0.25	0	10	15	16	0	s.	San Juan W. & P. Co.
Terrill's Ranch	Mesa	7,000									1.27		0.74	0	8	19	12	0	ne.	A. F. Terrill.
Uncompahgre Plateau	Montrose	8,400	1								0.82		0.40	0	3	11	20	0	sw.	Martin Esser.
Yampa (near)	Routt	8,000	2								1.98		0.49	0	7	8	18	5	nw.	Percy A. Hughes.
Utah.																				
Aneth	San Juan	4,800	8	76.7		99	17	51	28	41	0.71		0.48	0	5	23	8	0		H. R. Antes.
Bluff	do			77.4		102	19	52	28	46	1.04		0.83	0	5	6	8	17	w.	Geo. D. James.
Castle Dale	Emery	5,500	12	69.0	+1.6	95	17	42	28	45	0.70	−0.18	0.60	0	2	26	5	0		James Jeffs.
Cisco	Grand	4,447		77.2[d]		104	19	50	22†	45	0.05		0.05	0	1	28	2	1		J. J. Anderson.
Desert Lake	Emery										0.46		0.40	0	2					H. G. Mills.
Dragon	Uinta			69.2		93	8†	42	15†	46	1.24		0.30	0	8	22	2	7	n.	Gilson Asphaltum Co.
Duchesne	Wasatch		5	66.4		93	19	38	28	52	0.34		0.18	0	3	11	20	0		M. M. Smith.
Elkhorn	Uinta	6,657	1								0.19		0.19	0	1	12	18	1	sw.	Chas. De Moisy, jr.
Emery	Emery	6,200	10	63.5	−2.2	86	15†	40	3†	43	1.05	−0.07	1.05	0	1	4	10	17	sw.	H. C. Wickman.
Escalante	Garfield	5,700	10	66.3	−2.4	90	1	41	6	45	1.65	+0.06	0.60	0	5	8	0	23		Geo. H. Barney.
Fort Duchesne	Uinta	5,000	21	70.0	+0.6	100	17†	38	25	58	0.51	−0.21	0.30	0	3	22	4	5	w.	Post surgeon.
Fruitland	Wasatch	7,625	1	62.5		91	19	32	25	50	0.18		0.14	0	2	12	18	1	sw.	J. Peter Naab.
Green River	Emery	4,080	10	76.8	−0.3	103	17†	47	25	52	0.33	−0.40	0.09	0	5	23	8	0	sw.	Edgar E. Adams.
Hanksville	Wayne	4,200	1																	F. J. Weber.
Hite	Garfield	3,000	10	83.4	+1.0	106	17	60	30	40	0.26	−0.44	0.16	0	2	20[a]	10[a]	0[a]	sw.	John P. Hite.
Kanab	Kane	4,925																		W. J. F. McAllister.
Lasal	San Juan	7,000	10																	Gertrude W. Carpenter.
Loa	Wayne	7,000																		W. S. McClellan.
Manila	Uinta	6,225	1	60.4[d]		90	9	35[a]	25†	47[a]	0.45		0.25	0	5	8	23	0		Daniel M. Nelson.
Moab	Grand	4,000	22	77.4	+2.2	104	19	50	3†	50	0.75	+0.04	0.42	0	6	16	13	2		Henry Crouse.
Monticello	San Juan	7,545	2	64.6		84	19	44	28	34	2.24		0.70	0	13	9	21	1	sw.	Geo. F. Barton.
New Harmony	Washington										0.50		0.50	0	1	20[a]	0[a]	10[a]	n.	Geo. F. Prince.
Orderville	Kane	6,660	1								0.08		0.05	0	2					F. A. Porter.

TABLE 1.—*Climatological data for August, 1911. District No. 9*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Utah—Continued.																			
Pine Valley	Washington	6,000	1																Mason Gardner.
Price	Carbon	5,557		68.0		94	20	42	30	49	0.00		0.00	0	0	28	0	3	se.	R. H. Thompson.
Ranch	Kane	6,700	9	60.4		86	17	36	4†	46	0.30		0.20	0	2	20	11	0	w.	J. W. Seaman.
San Rafael	Emery										0.00		0.00	0	0	21	8	2	se.	W. C. Foy.
St. George	Washington	2,880	21	80.3	−0.4	104	19	52	7†	48	0.08	−0.66	0.05	0	2	10	16	5		A. B. Ballantyne.
Scofield	Carbon	7,625	1	56.8		86	17†	24	26†	53	0.32		0.11	0	5	23	3	5	s.	Bernard Newren.
Springdale	Washington	3,500	3	82.2		105	18	62	25†	39	0.56		0.36	0	2	20	0	11		Hattie Wood.
Sunnyside	Carbon	5,280	6								0.47		0.19	0	5					Henry Cullum.
Teasdale	Wayne	7,000	3	65.8		83	8	47	13	31	1.12		0.40	0	11	13	0	18		Josiah Shurtz.
Thompsons	Grand	5,150		76.1		96	17†	52	23	33	0.18		0.15	0	2	22	8	1	sw.	A. M. Starmont.
Tropic	Garfield	7,000	13	65.7	−0.1	90	17†	41	6	46	1.00	−0.47	0.53	0	2	9[a]	19[a]	2[a]	sw.	E. P. Bolton.
Trout Creek Ranger	Uinta	9,200	1								0.61		0.20	0	5	9	18	4		U. S. Forest Service.
Vernal	do	5,050	15	68.6	−1.2	96	17†	39	27	50	0.01	−0.62	0.01	0	1	28	2	1		S. P. Trim.
Woodside	Emery	4,645		73.3		99	17†	44	25	47	0.65		0.19	0	6	17	2	12	s.	D. P. Adams.
New Mexico.																				
Alma	Socorro	5,500	15	75.4	+ 1.9	102	17	50	27†	48	1.99	− 0.71	1.72	0	6	7	22	2	nw.	M. A. Balke.
Aragon	do	5,856	4	62.1		90	7	36	5†	51	1.65		0.60	0	4	7	23	1		John R. Milligan.
Aztec	San Juan	5,590									0.70	− 0.37	0.41	0	6	12	15	4	sw.	Dr. T. J. West.
Blackrock	McKinley	6,500	3																	R. J. Bauman.
Bloomfield	San Juan	5,500	16	71.4	− 1.6	99	9	44	30	50	1.06	− 0.20	0.38	0	8	11	18	2	sw.	Fred Le Clerc.
Cambray	Luna	4,215	12								0.40	− 0.94	0.15	0	3	18	13	0		Agent So. Pac. R. R.
Cliff	Grant	4,470	12																	W. C. Belden.
Columbus	Luna	4,054	2								0.09		0.09	0	1	17	12	2	nw.	Agent E. P. & S. W. R. R.
Deming	do	4,333	34	78.6		104	19	55	8†	48	0.30	− 1.56	0.30	0	1	4	13	14	w.	Agent So. Pac. R. R.
Dulce	Rio Arriba	6,756	4	63.4	− 0.2	90	9†	36	3	48	1.67	− 0.41	1.13	0	11	13	15	3	sw.	G. H. Blakeslee.
Fort Bayard	Grant	6,152	36	72.0	+ 0.8	98	7	50	29	37	2.02	− 0.83	0.95	0	11	18	12	1	ne.	U. S. General Hospital.
Fruitland	San Juan	4,800	18	71.6	− 1.2	97	19	44	3	49	0.54	− 0.09	0.30	0	5	16	15	0	sw.	Cyril J. Collyer.
Gage	Luna	4,486	4	79.4		105	11	55	27	45	0.30	− 1.27	0.20	0	2	6	21	4	w.	Agent So. Pac. R. R.
Gila Planting Station	Grant	6,475		70.9		93	7	49	26	34	1.53		0.46	0	15	17	13	1	w.	U. S. Forest Service.
Hachita	do	4,504	2								0.98		0.50	0	9	15	15	1	nw.	Agent E. P. & S. W. R. R.
Haynes	Rio Arriba	6,600	1	74.6		96	14	56	21	27	1.29		1.05	0	3	28	2	1	nw.	Dr. John R. Haynes.
Hermanes	Luna	4,451	2								1.03		1.00	0	2	19	3	9	e.	Agent E. P. & S. W. R. R.
Lordsburg	Grant	4,245	11	79.5	− 1.0	104	8	56	28†	44	0.50	− 0.99	0.35	0	5	8	23	0	sw.	Agent So. Pac. R. R.
Luna	Socorro	7,300	6																	C. B. Martin.
Mimbres	Grant	5,007	6								1.91		1.14	0	4	18	13	0	se.	Charles Dennis.
Pinos Altos (near)	do	8,000									4.61		0.66	0	15	18	9	4		O. L. Scott.
Pratt	do	4,415	2								1.33		0.52	0	6	14	0	17	s.	Agent E. P. & S. W. R. R.
Putnam	San Juan	6,200																		D. Lee Thompson.
Redrock	Grant	4,150	6								1.71		0.30	0	11	12	15	4		Robert H. Woods.
Rodeo	do	4,118	2								1.81		0.66	0	4	20	10	1		Agent E. P. & S. W. R. R.
Arizona.																				
Allaire's Ranch	Cochise	4,184	14								1.52	− 1.40	0.45	0	11	12	16	3	w.	Thos. Allaire.
Alpine	Apache	8,500																		U. S. Forest Service.
Aztec	Yuma	492	13	93.3	− 1.3	113	16†	71	5†	39	0.00	− 0.45	0.00	0	0	23	6	2	w.	Agent So. Pac. Co.
Benson	Cochise	3,523	31	79.7	− 1.9	103	18	55	6	45	1.97	− 0.27	1.14	0	7	11	17	3	e.	Do.
Bisbee	do	5,500	22	73.7	+ 0.8	91	18	57	27	26	3.56	− 1.17	0.92	0	10	8	20	3	w.	Rev. J. G. Pritchard.
Bowie	do	3,756	35	77.4	− 4.1	106	8	50	30	48	2.39	− 0.39	0.91	0	7	8	19	4	se.	Agent So. Pac. Co.
Buckeye	Maricopa	980	19	88.0	− 1.5	112	16†	60	26†	47	1.15	+ 0.29	0.98	0	2	24	2	5	sw.	H. E. Kell.
Canille	Santa Cruz	5,225	2								3.51		0.95	0	14	3	28	0	se.	R. A. Rodgers.
Casa Grande	Pinal	1,396	29																	Agent So. Pac. Co.
Casa Grande Ruins	do	1,422	3	88.1		110	19	63	5	45	0.13		0.06	0	5	14	15	2	w.	F. Pinkley.
Cave Creek	Maricopa	1,520	4	83.3		106	17†	56	5	45	1.33		0.43	0	7	21	10	0		E. A. Howard.
Chin Lee	Apache	6,090	3	71.4		94	8†	45	28	42	1.40		0.57	0	6	10	14	7	sw.	Fr. L. Ostermann, O. F. M.
Chlarsons Mill	Graham	8,000	5	64.4		82	18	51	28	26	2.95		1.03	0	10	14	13	4		H. R. Chlarson.
Clifton	Greenlee	3,584	20	86.2		106	14†	65	25†	36	0.29	− 2.15	0.27	0	2	15	15	1		P. Reisinger.
Cline	Gila	2,300	13	81.0	− 1.1	102	16†	56	6	42	1.75	− 0.59	0.67	0	7	10	18	3	sw.	W. M. Clanton.
Cochise	Cochise	4,219	13	79.8	+ 0.3	101	7†	55	6	44	1.12	− 1.00	0.85	0	5	20	1	10	sw.	Agent So. Pac. Co.
Columbia	Yavapai	1,900	10	88.1	+ 1.8	111	16	62	1	42	1.95	− 0.12	0.70	0	3	12	17	2	se.	M. J. Nolan.
Courtland	Cochise	4,543	2								2.63		0.78	0	13	5	26	0	sw.	Agent E. P. & S. W. Co.
Dos Cabezos	do	5,250	3	72.2		96	7†	50	5†	44	4.04		0.88	0	8	17	11	3	w.	N. Erickson.
Douglas	do	3,930	8	79.8		105	6†	58	23†	46	2.29		0.75	0	13	11	14	6	sw.	Dr. F. T. Wright.
Dudleyville	Pinal	2,204	21	80.4	− 1.8	101	17	60	3	38	2.06	− 0.44	0.60	0	11	6	24	1	sw.	G. F. Cook.
Fairbank	Cochise	3,862	2								3.12		1.26	0	12	5	11	15	sw.	Agent E. P. & S. W. Co.
Flagstaff	Coconino	6,907	20	62.1	+ 0.7	84	17	41	30	38	2.45	− 0.85	0.55	0	16	13	10	8	nw.	U. S. Weather Bureau.
Flagstaff (1)	do	7,452	5	61.4		85	17	39	6	40	3.33		0.65	0	17	14	11	6		C. C. Moers.
Flagstaff (2)	do	7,500	2	59.3		84	15	35	5†	44	2.32		0.80	0	13	10	6	15	sw.	U. S. Forest Service.
Florence	Pinal	1,504	12	88.4	+ 0.9	110	2†	62	1	47	0.56	− 1.25	0.24	0	4	18	11	2	sw.	Agent Ariz. Eastern R. R. Co.
Fort Apache	Navajo	5,200	40	72.2	+ 4.2	102	19	47	30	47	1.42	− 1.67	0.42	0	6	18	13	0	sw.	Post Surgeon, U. S. A.
Fort Huachuca	Cochise	5,100	25	77.6	+ 3.6	100	6†	56	22†	37	0.97	− 3.29	0.60	0	8	19	0	12	ne.	Do.
Gilabend	Maricopa	737	21	93.2	+ 1.4	119	12	68	4†	43	0.00	− 0.99	0.00	0	0	28	1	2	w.	Agent So. Pac. Co.
Globe	Gila	3,525	9	81.2		105	18†	59	27	36	1.33		0.38	0	9	6	25	0	nw.	B. G. Fox, M. D.
Grand Canyon	Coconino	6,866	6	64.2		83	18	41	11	33	2.13		0.72	0	6	18	6	7	sw.	Agent G. C. R. R. Co.
Grand Canyon (1)	do	3,676	4	80.2		100	7	59	23	33	1.63		0.71	0	6	9	15	7	sw.	C. C. Spaulding.
Granite Reef Dam	Maricopa	1,372	21	88.2	− 0.3	110	19	65	6	39	0.66	− 0.75	0.39	0	3	22	8	1	w.	U. S. Reclamation Service.
Greer	Apache	9,200	7																	Mrs. M. Butler.
Hereford	Cochise	4,180	2								2.10		0.88	0	5	9	18	4	sw.	Agent. E. P. & S. W. Co.
Holbrook	Navajo	5,069	21	76.1	+ 1.1	102	19	50	28	47	0.74	− 0.68	0.44	0	3	24	1	6		T. Larson.
Indian Oasis	Pima	3,000																		J. Menager.
Intake	Gila	2,230	6								1.45		1.15	0	2	20	8	3	w.	U. S. Reclamation Service.
Jerome	Yavapai	4,743	13	77.4	+ 0.4	97	17	60	21†	28	5.32	+ 1.68	1.33	0	9	10	18	3	sw.	Dr. L. A. Hawkins.
Keames Canyon	Navajo	6,600	8	69.0		91	19	46	29	40	0.89		0.20	0	8	6	21	4	w.	D. E. Livesay.
Kingman	Mohave	3,326	10	81.2	0	107	19	54	6†	50	0.48	− 1.50	0.28	0	3	16	15	0	sw.	G. R. Gooding.
Lakeside	Navajo	6,500	13	66.6		90	18	41	28	41	2.79	+ 0.49	0.68	0	9	13	15	3	sw.	Prof. J. Peterson.
Lewis Springs	Cochise	4,029	2								2.18		0.50	0	11	5	25	1		Agent E. P. & S. W. Co.
Maricopa	Pinal	1,186	35	89.7	− 2.2	114	5	65	2†	43	2.32	− 0.36	1.10	0	3	19	11	1	sw.	Agent So. Pac. Co.
McNeal	Cochise	4,490	1								2.21		0.42	0	14	10	20	1	w.	C. E. Bolton.
Mesa	Maricopa	1,244	16	84.7	− 2.6	105	15†	63	6	38	1.13	− 0.35	0.45	0	5	11	19	1	sw.	C. L. Diehl.
Mohawk Summit	Yuma	538	12	95.0	+ 0.8	120	8	73	10†	45	0.00	− 0.91	0.00	0	0	16	15	0	e.	Agent So. Pac. Co.
Naco	Cochise	4,579	2								2.06		1.00	0	10	14	14	3	sw.	Agent E. P. & S. W. Co.
Natural Bridge	Gila	4,990	22								4.93	+ 1.67	2.50	0	7	12	17	2	sw.	D. G. Goodfellow.
Oracle	Pinal	4,500	20																	W. H. Winters.

TABLE 1.—*Climatological data for August, 1911. District No. 9*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Arizona—Continued.																				
Osborn	Cochise	4,676	2																	Agent E. P. & S. W. Co.
Paradise	....do	5,436	4	70.2		95	7	49	10†	45	4.19		1.98	0	9	3	28	0	sw.	J. C. Hancock.
Parker	Yuma	345	12	86.7	− 4.8	116	16†	60	9†	53	0.00	− 0.88	0.00	0	0	28	6	3		M. A. Israel, M. D.
Payson	Gila	5,550	3	72.2		92	14†	50	1†	38	3.03		1.01	0	7	16	10	5		M. McDonald.
Phoenix	Maricopa	1,108	16	87.7	− 1.3	108	19	66	27	34	1.68	+ 0.72	0.68	0	6	21	9	1	e.	U. S. Weather Bureau.
Phoenix (1)	....do	1,092	20	86.9	− 0.9	110	16	65	1†	41	1.97	+ 0.92	0.80	0	5	18	11	2	sw.	G. Acuff.
Phoenix (2)	....do	1,189	3	87.4		108	15†	62	27	42	0.96		0.50	0	3	21	8	2	sw.	Horne & Armstrong.
Pinal Ranch	Pinal	4,520	17								3.26	− 0.08	1.65	0	6	22	6	3		Irion & Craig.
Pinto	Apache	5,660	7								1.62		1.14	0	3	23	6	2	sw.	Mrs. C. F. Henning.
Prescott	Yavapai	5,320	44	70.2	− 0.9	94	18	48	3†	40	2.78	− 0.31	1.08	0	8	18	9	4		J. W. Flinn, M. D.
Quartzsite	Yuma	800	4	92.6		114	17†	72	7†	41	0.00		0.00	0	0	17	13	1	w.	W. E. Scott.
Redrock	Pinal	1,864	4	91.4		110	15†	68	23†	38	1.12		0.40	0	7	4	27	0	w.	W. J. Crowell.
Roosevelt	Gila	2,175	7	88.0		107	16	67	10	34	2.01		1.80	0	2	10	16	5	e.	U. S. Reclamation Service.
Sacaton	Pinal	1,280	4	86.2		109	19	61	31	42	0.82		0.47	0	3	14	15	2		E. W. Hudson.
St. Johns	Apache	5,650	9	71.2		97	7†	46	6	50	1.11		0.34	0	5	11	18	2	s.	A. Shreeve.
St. Michaels	....do	6,950	24	68.2	+ 0.9	90	2†	43	28	40	1.35	− 1.14	0.50	0	7	10	16	5	sw.	Rev. A. Weber, O. F. M.
Salome	Yuma	1,875	4	85.4		106	31	57	6	45	0.08		0.08	0	1	16	15	0	s.	Mrs. M. B. Swartz.
San Carlos	Gila	2,456	28	82.6	− 0.9	113	15	48	6	57	0.59	− 2.00	0.24	0	4	12	18	1	sw.	F. S. Thomas.
San Simon	Chochise	3,609	27																	Agent So. Pac. Co.
Seligman	Yavapai	5,219	6	69.4		99	14	46	4†	48	0.23		0.12	0	3	15	14	2	sw.	Lib. A. T. & S. F. R. R. Co.
Sentinel	Maricopa	685	13	91.8	− 1.4	112	30	70	11	37	0.10	− 0.30	0.10	0	1	26	4	1		Agent So. Pac. Co.
Silverbell	Pima	2,650	6	86.8		117	17	61	17	56	1.53		0.52	0	6	12	16	3	ne.	Imperial Copper Co.
Snowflake	Navajo	5,644	4	69.4		92	18	45	5	44	1.80		0.34	0	11	6	14	11	sw.	W. J. Flake.
Springerville	Apache	6,862	1	59.6		87	19	32	28†	48	2.40		0.43	0	15	14	8	9	s.	U. S. Forest Service.
Supai	Coconino	3,200	6	83.6		106	17	64	20	36	0.98		0.57	0	5	14	8	9		A. H. Symons.
Tempe	Maricopa	1,165	7	86.8		110	19	61	6	43	1.12		0.54	0	5	20	11	0	nw.	F. H. Simmons.
Thatcher	Graham	2,800	8	82.0		107	16	53	5	49	1.34		0.91	0	5	14	15	2	se.	Prof. J. H. Larson.
Tombstone	Cochise	4,550	18	79.2	+ 3.2	103	6	60	20†	37	2.79	− 1.02	0.88	0	11	12	19	0		F. N. Walcott.
Truxton	Mohave	3,997	2	79.2		100	16†	57	5	38	0.66		0.34	0	3	16	14	1	s.	G. A. Dennis.
Tuba	Coconino	4,500	12	73.7	− 1.4	97	17	52	5†	42	0.37	− 0.43	0.18	0	4	15	10	6	sw.	H. P. Marble.
Tucson	Pima	2,390	32	85.0	− 0.3	106	15	63	4	40	2.06	− 0.36	0.70	0	9	5	26	0	nw.	University of Arizona.
Tucson (1)	....do	2,380	3	83.0		108	15	58	4†	45	2.64		0.90	0	8	11	14	6	sw.	J. M. Robe.
Tucson (2)	....do	2,526	1	85.0		107	15	65	31	42	1.78		0.63	0	2	14	6	11	w.	U. S. Coast & Geod. Sur.
Vail	....do	3,421	12	79.0	− 0.7	103	13	60	10†	41	3.64	+ 2.42	2.05	0	5	14	14	3	sw.	Agent So. Pac. Co.
Walnut Grove	Yavapai	3,649	19								2.33	+ 0.17	1.40	0	3	12	15	4		J. O. Carter.
Wickenburg	Maricopa	2,072	12	88.8	+ 3.6	110	9	65	6	38	1.15	− 0.73	0.72	0	4	22	9	0	w.	Agent S. F. P. & P. Ry.
Willcox	Cochise	4,164	31	74.5	− 3.9	101	7†	48	12	51	0.81	− 1.67	0.22	0	5	16	0	15	s.	Agent So. Pac. Co.
Williams	Coconino	6,750	11	64.6	− 2.0	88	21	39	30	41	1.93	− 0.83	0.66	0	7	13	14	4		E. J. Nordyke.
Winslow	Navajo	4,853	7	74.8		101	8	45	2	53	1.28		0.49	0	4	19	10	2		J. F. Bauer.
Yuma	Yuma	141	31	90.9	+ 0.8	114	30	68	4	43	0.01	− 0.34	0.01	0	1	30	1	0	s.	U. S. Weather Bureau.
Yuma (1)	....do	150	4	85.4		111	30	59	5	49	0.00		0.00	0	0	30	0	1	sw.	A. L. Crane.
Nevada.																				
Caliente	Lincoln	4,407	1	68.8		101	20	36	9	57	0.01		0.01	0	1	26	5	0	se.	Salt Lake Route.
Logan	Clark	1,700	4	85.1		110	16†	60	1†	47	0.00		0.00	0	0	14	17	0	s.	R. M. Filcher.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 9, Colorado Valley.*

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																	
Battle Mountain	Snake																																
Daniel	Green					.30												T.															0.30
Eden	do		.02				.42																										0.44
Green River	do	T.	T.									T.									.01		.03										0.04
Merna	do																																
Pinedale	do											.02																					0.02
Rambler	Snake										.12	.21					.07			.06	.49		.17	.11									1.23
Willow Creek Cabin	Green																																
Colorado.																																	
Ashcroft	Grand		.04							.07	.32	.24	.07	.08		.04	.17	.02	T.	.03	.04	.07	.09	.49	.18	.01			T.			.06	2.02
Breckenridge	do																																
Buford	White											.08	.21	.06		.09					.24	.22	.41										1.31
Cascade	San Juan										.40	.15	.17				.07	.03	.55		.03	.40	.35	.02	.04	.06	.01	.15	.04				2.47
Cedaredge	Gunnison											.25					.02				.02	.05		.63				.09					1.06
Chromo	San Juan		T.							T.	.18		.40			T.			T.	T.		.40	1.30		.30		.20	.25				T.	3.03
Cochetopa	Gunnison		T.							.05	.05	.25	.22			.15	.86	.50			.50	.76	.16	.14	.05			T.					3.69
Collbran	Grand										.11	.06	.11								.15	.04	.01	.39	.03								0.90
Columbine	Yampa													.26		.23	.02			.06	.35	.23	.13	.22	.07								1.57
Columbine Ranch	Gunnison									.25	.35						.17					.08	.17	.40	.38			.01					1.81
Corona	Grand										.11	.49	.28	.10				.24	.05	.03		.42	.03	.50	T.								2.25
Cortez	San Juan																																
Craig	Yampa																																
Crawford (near)	Gunnison		.06								.25	.28	.16			.02	.01				.07	.06	.07	.08	.01								1.07
Crested Butte	do									.11	.40	.10	.10	.05		T.				T.	.12	.10	.25		.31			T.					1.54
Delta	do										.07	.10							.32		.02			.03	.01								0.55
Dillon	Grand	T.	.20								.20			T.	T.			T.	.10			.15	T.	.10	.10	T.	T.	.11					0.96
Durango	San Juan									.13	.09	.02	.03			T.		.10		T.	.09	.01	.65	1.31	.06	.01		.25	.01	.12		.01	2.89
Eureka	do													.18		.30	.20			.11	.20			.09						.10	.13		1.31
Fraser	Grand									.04	.35	.13	.02				.17	.03	.07		.40		.62	.03									1.88
Fruita	do									T.	T.	T.	.40	.42			.02				T.	T.	.11	.03	T.		T.						0.98
Gladstone	San Juan										.76	.15		.04	.03	.18	.19	.04	.08	T.	.01	.37	.02	T.	T.	T.	.09	.27	T.	T.				2.23
Glenwood Springs (near).	Grand									T.	.04	.03							.50				.22										0.79
Grand Junction	do									T.	.01	T.	.09				.02		T.		.11	.05	.07									T.	0.35
Grandlake	do	T.	T.									T.				T.	.40	T.	.60	.20			.80	T.	T.	T.	T.	T.					2.00
Grand Valley	do									T.	.18	T.	.03	T.			T.				.08	.02	.21	.33	.03			T.	T.			T.	0.88
Gunnison	Gunnison		.04							.03	.30		.15		T.		.16				.02	.03	.19	.13	.06			T.				T.	1.11
Horsefly	do																																
Ironton	do		.06							.06	.27	.18	.26	.06	T.		.04	.06	.03	.06	.04	.32	.30	.06	.20	.01		.08	.03			.03	2.15
Lake City	do		.06	.03							.14	.05	.09	.15		.01	.10	.01	.01		.17	.27	.65		.14			.03	.13	.02			2.06
Lay	Yampa												.06	.10		T.	T.	T.	T.		T.	.25		T.							T.	0.41
Mancos	San Juan										.72		T.				.02	.15			.03	.12	.37			T.	T.	.41	T.				1.82
Marble	Grand									.03	.01										.15		.55		.10								0.84
Marshall Pass	Gunnison		.10								.20	.23	.13						30				1.50										2.46
Meeker (near)	White										.15	.11				.27		T.			.58	.08	.46									.02	1.67
Montrose	Gunnison										.07	.28	.07	.03		.14						.10			.09								0.78
Nast	Grand										.38		.12			.21						.37	.11	.35									1.54
Pagoda	Yampa										.53	.09	T.				T.	T.		.10	.70	.10	.30	.36									2.18
Pagosa Springs	San Juan		T.						*	.17	.26		T.						.07	.38	T.	.01	.35	1.15	.17	.02	.09	T.	.13	T.				2.80
Palisade	Grand							T.		T.	T.		T.								.05	.22	.11	.05	.02			.06					0.51
Paonia	Gunnison	T.	T.								.32	.19					T.				T.	.08	.02	.32					T.		T.		0.93
Parshall	Grand										.45	.25							*		.36	.08	.70						.30				2.14
Pitkin	Gunnison		.07							T.	.29	.05		.01						.09	T.			.83	.26			.08					1.68
Pyramid	Yampa		T.		T.						.11	.18	.05	.05		T.			.01	*	.17	.19	.17	.12	T.							.02	1.07
Rangely	White																																
Redcliff	Grand																																
Rico	Dolores									.15	.33	.30	.16				.08				.02			31			.10	.20					1.65
Rifle	Grand																																
River Portal	Gunnison									.01	.39	.22	.05									.17		.24	.01								1.09
Sapinero (near)	do	T.	.20							.22	.26	.06	.30	T.		T.					T.	.06	.03	.13	.09			.07				T.	1.42
Shoshone	Grand		.06							.15	.24	.02	.05								.22	.59	.03	.54	.03				.01			.01	1.95
Silverton (near)	San Juan		.05	.10								.15	.80	.40	.31	.18	.90	.40	.80	T.	.01	.37	.20	T.	.01	T.	.90	.20	T.	T.		T.	5.78
Spruce Lodge	Grand		.07							.18	.50	.34	.18	.12		.10	.06		.14	.01	.40	.22	.11	.55	.05				.04			.10	3.17
Steamboat Springs	Yampa											.36									.20		.00										1.16
Tacoma	San Juan										.56	.08	.16	.19	.39	T.						T.	.33	.30		T.		.16	T.	.14			2.31
Telluride	San Miguel		.02	T.							.18	.20	.23	.14		.16	.04		.15		.05	.25	.30	.04	.08	.10		.13	T.	T.		.01	2.08
Terminal Dam	San Juan								.03	.15	.10					.14					.06	.14			.25			.15	.10	.15			1.27
Terrill's Ranch	Grand									T.	.01	T.	.74				.02			.13	.04	.16	.16		.01								1.27
Uncompahgre Plateau.	Gunnison											T.	.40			T.					T.	.18			.24								0.82
Yampa (near)	Yampa		T.							T.	.27	.11	T.			T.	T.	.18	T.		.31	.42	.49	T.					T.			.20	1.98
Utah.																																	
Aneth	San Juan									.10	.03		.06										.48					.04					0.71
Bluff	do									.14	.05	.01	T.								.01		.83					T.					1.04
Castle Dale	Green												T.	T.	T.	T.	T.		T.			.10	.60	T.						T.	T.		0.70
Cisco	Grand											.05																					0.05
Desert Lake	Green																						.06						.40				0.46
Dragon	do										.29	.12		.02	T.				.15	.05			.30	.26	.05								1.24
Duchesne	do										T.	T.	T.			T.			.18	T.			.11	.05				T.					0.34
Ekhorn	do																						.19										0.19
Emery	Colorado				T.			T.			T.													1.05									1.05
Escalante	do																.05		.60			.50	.45					.05					1.65
Fort Duchesne	Green											.10		.11									.30										0.51
Fruitland	do										T.	T.	T.	T.	T.	.04			T.	T.	T.		.14	T.					T.				0.18
Green River	do											.09	.09				.05							.04				.06					0.33
Hanksville	Colorado																																
Hite	do									T.	T.		T.								T.	T.	.10		T.		.16	T.					0.26
Kanab	do																																
Lasal	Grand																																
Loa	Colorado																																
Manila	Green												.04			.05			.03		.08		.25										0.45
Moab	Grand									.01	.04		.20								.42	.03						.05					0.75
Monticello	do										.70			.23			.35				.04	.05	.11	.01	.26	.02	.03	.32	.10	.02			2.24
New Harmony	Colorado																								.50								0.50
Orderville	do												T.	.03							.05												0.08
Pine Valley	do																																
Price	Green																																0.00
Ranch	Colorado												T.		T.													.20		.10			0.30
San Rafael	Green																																0.00

TABLE 2.—*Daily precipitation for August, 1911. District No. 9*—Continued

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Utah—Continued.																																	
St. George	Colorado													.03															.05				0.08
Scofield	Green														.03	.11							.10					.02	.06			T.	0.32
Springdale	Colorado							.36																	.20								0.56
Sunnyside	Green								T.			T.	T.		.06	.08						.19		.10			.04						0.47
Teasdale	Colorado									.03	.02	.26	.01			.40	.03	.04	.03		.04	.05	.21										1.12
Thompsons	Green																			T.	T.	.15	T.					.03	T.				0.18
Tropic	Colorado									T.		.53	T.					T.		.47	T.	T.			T.								1.00
Trout Creek Ranger	Green			T.						.10												.20	.15	.13		.03				T.			0.61
Vernal	do																						T.	.01									0.01
Woodside	do											.02	.06									.14	.19	.10				.14					0.65
New Mexico.																																	
Alma	Gila									T.		.04	.10		T.							.10		1.27	.45	.03							1.99
Aragon	do											.50					.40					.15	.60			T.							1.65
Aztec	San Juan									*	.22		T.	.05					T.		T.	*	.41	T.	T.		T.	.02	T.				0.70
Blackrock	Little Colorado.																																
Bloomfield	San Juan	T.								.07	.17	T.	.04					.22		T.	.02	.02	.38			T.	T.	.14					1.06
Cambray	Mimbres										.11														.14	.15							0.40
Cliff	Gila																																
Columbus	do																								.09								0.09
Deming	Mimbres																									.30							0.30
Dulce	San Juan									.01	.01		.08			T.		.02	T.			.18	.95	.01	.19	.15		.06	.01				1.67
Fort Bayard	Mimbres								.03			.01					T.	T.	.16	.05	.38	.02	.02	.95	T.	.17	T.	.21		.02				2.02
Fruitland	San Juan									*	.15		.02								T.		.30					.07					0.54
Gage	Mimbres			T.		T.		T.				T.								T.					.20		.10						0.30
Gila Planting Station.	do							.01				.04		T.	.01	.05	.14		.01	.02	.01	.09	T.	.21	T.	.46	.31	.05		.02	T.	.10		1.53
Hachita	Gila																.02	.03	.05	.04		.02			.09	.03	.20	.50					0.98
Haynes	San Juan										.14					.10						1.05											1.29
Hermanes	Gila																						1.00			.03							1.03
Lordsburg	do																					.02	.35		.04	.06					.03		0.50
Luna	do																																
Mimbres	Mimbres																							1.14		.39	.24			.14			1.91
Pinos Altos	Gila								.64	.66			.03		.40		.56	.06	.43		.04		.04		.16	.37	.22	.50	.24	.26			4.61
Pratt	do															.17	.11						.52		.02	.40	.11						1.33
Putnam	San Juan																																
Redrock	Gila					.06								.12			.04		.03		.10	T.	.30	.20	.14	.30	.16		T.	.26	T.	T.		1.71
Rodeo	do																					.45	.22			.48		.66					1.81
Arizona.																																	
Allaires Ranch	Sonora									.03		.01			.08		.02			.08	.45	.02	.15		.14	.08	.11	.35					1.52
Alpine	Gila																																
Aztec	do																																0.00
Benson	San Pedro									.03	T.	T.		.10	.05	.10	T.		.25	T		1.14				30							1.97
Bisbee	do										92	.13			.22		.15				T.	.35	30	.21		39	T.	.18			T.	T.	3.56
Bowie	Gila									.15	.56											.32	.59			.17		.42				.18	2.39
Buckeye	do																			T.			17				.98						1.15
Canille	San Pedro							.08	.04			.16	T.	.16	.15		.14		.02	.25	.25	.95	.31	.05		T.	.17	.78			T.	T.	3.51
Casa Grande	Gila																																
Casa Grande Ruins	do									T.	.06	T.						T.	.02		T.		T.	.01	.02		T.	.02					0.13
Cavecreek	Verde										43									.02		.20	.02	.28				.36	.02					1.33
Chin Lee	San Juan								T.	.10	.31	.26	T.			T.					T.	T.	.57		.13	T.	.03			T.				1.40
Chlarson's Mill	Gila								.20	.30	.05	.01					.03				.60		.70		.01		.02	1.03					2.95
Clifton	do										T.						.02		T.				T.	T.	T.	T.	T.	.27				T.	0.29
Cline	Salt										36							.04				.69	.04			.02	.05	.55					1.75
Cochise	Desert													.02						.07			.04			.85	.14						1.12
Columbia	Agua Fria										70						T.					.55	.70										1.95
Courtland	White								.04	.21	.14		.02	.04		.40			.02		.34	.13	.15		.24	.78	.12						2.63
Dos Cabezos	Desert								.48	.10	.09					.30	.85					.48	.86			.88							4.04
Douglas	Sonora		.01				T.		T.		10		.05	.07	T.	.06			T.	.05	.41	.11	.08	T.		.52	.06	.75	.02	T.			2.29
Dudleyville	Gila									.01	T.	T.	.14		.01	T.	.16	.06	.17	T.	T.	.20	T.	.60	.06	T.	.37	.28	T.	T.	T.	T.		2.06
Fairbank	San Pedro									.32	T.		.08		.09	.14				.08		.35		1.26		.18	.06	.39	.08	.09				3.12
Flagstaff	L. Colorado									T.	.24	T.	.42			.01	.14	.02	T.	.11	.22	.14	.09	.54		.15	.23	.01	.03	.09		.01		2.45
Flagstaff (1)	do										.02	.11	.56		T.	.12	.02	.04	.07	.01	.55	.21	.40	.10	.02	.16	.65	.22	.07	T.				3.33
Flagstaff (2)	do								T.		.18		.06	.03				.09	.12	T.	.05	.07	.27	.80	T.	T.	.06	.43	.03	.13	T.			2.32
Florence	Gila										10		10										12			24							0.56
Fort Apache	Salt									30			42									16		16			20			18			1.42
Fort Huachuca	San Pedro								.60			.12			.02						.07	.01	.03			.07	T.	.05					0.97
Gilabend	Gila																																0.00
Globe	Salt									.01				.02	.06				.02			.16	.38	.02			.32	.34					1.33
Grand Canyon	Colorado										.33	.20	.08									.72	.55	.25			T.						2.13
Grand Canyon (1)	do										.15	.20	.26				T.					.71	.10	.21	T.	T.							1.63
Granite Reef Dam	Salt										.21					T.							.06					.39					0.66
Greer	L. Colorado																																
Hereford	Gila													.53				20				.04	.45			.88							2.10
Holbrook	L. Colorado									.44						19						T.					.11						0.74
Indian Oasis	Desert																																
Intake	Salt											.30														1.15							1.45
Jerome	Verde											.15	.13		.09	.11						1.33	.79	1.20	.44		T.		1.08				5.32
Keams Canyon	Little Colorado.									.15	T.		.07	T.		.20		.01	.20			T.		.09	T.			.15	.02		T.	T.	0.89
Kingman	Colorado											T.	.16	.04	.28											T.							0.48
Lakeside	Little Colorado.								T.	.22	.68		.07	.46					T.	T.		.46	.18	.05				.38	.29					2.79
Lewis Springs	San Pedro							.08	T.	.50			T.	T.	.35	.04		T.	T.	.35	.06	.36	.04			.15		.23	.02					2.18
Maricopa	Gila									.35												.87					1.10						2.32
McNeal	Desert									.14	.20	.28		.05			.02			.09	.02	.19	.29	.13		.23	.05	.42		.10				2.21
Mesa	Salt								T.	.23				T.			T.			T.		.25	.10			.10	.45							1.13
Mohawk Summit	Gila																																0.00
Naco	San Pedro									.03	1.00	.04	.28				.09			T.		.29	.05			.06	.18	.04	T.				2.06
Natural Bridge	Verde										36						12					2.50	.25			.20	.70		.80				4.93
Oracle	San Pedro																																
Osborn	do																																
Paradise	Desert									.15	1.98					.42				.04		.21	.42			.33	.43	.21					4.19
Parker	Colorado																																0.00
Payson	Verde										.40						.37					.54	.26			.13	1.01	.33				T.	3.03
Phoenix	Salt									T.	.12						T.	T.		T.		.60	.27			.01	.65	.03					1.68
Phoenix (1)	do									T.	.27										T.	.60	.05	.25		T.		.80					1.97

TABLE 2.—*Daily precipitation for August, 1911. District No. 9*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Arizona—Contd.																																	
Phoenix (2)	Salt										.15											.50				.31							0.96
Pinal Ranch	Gila														.33					.69		.05		1.65	.04		.50					3.26
Pinto	Little Colorado.									T.	T.	T.		T.					T.	1.14	.34	T.	T.	T.	T.	.14	T.	T.	T.				1.62
Prescott	Hassayampa										T.	T.	.09		.04	T.		T.			T.	1.07	1.08	.04		.02	.31	.13				2.78
Quartzite	Colorado																																0.00
Redrock	Santa Cruz								T.			T.	T.			T.	.03	.11		.11	T.		.30			.40	.09			.08			1.12
Roosevelt	Salt									T.	.21												T.		T.	T.	1.80						2.01
Sacaton	Gila										.47											.15		.20									0.82
St. Johns	Little Colorado.									.34	T.	T.	.25				.15					.25					.12						1.11
St. Michaels	....do								T.		T.	.20	T.	.12	.12	.50						T.	.26		T.	.05	.10	T.	T.			T.	1.35
Salome	Colorado																					T.					.08						0.08
San Carlos	Gila													.10					.12							.24		.13					0.59
San Simon	....do																																
Seligman	Verde											T.	.06	.05	.12											T.							0.23
Sentinel	Gila																									.10							0.10
Silverbell	Santa Cruz									.30									34		.52	.15		T.		.12	T.	.10					1.53
Snowflake	Little Colorado.								.34	.23	T.	.06		T.	T.	.20				.18	.24	.21	.09	T.	.06	.13		.06					1.80
Springerville	....do							.01		.03	.18	.33	.12		.10	.05		.05	.05	.25	.20	.43		.05	.25	.30							2.40
Supai	Colorado													.08	.01						.03	.57	.29										0.98
Tempe	Salt										.15											.01	T.	.32			.10	.54					1.12
Thatcher	Gila									T.	.16		T.							T.	.06	.06	.15				.91						1.34
Tombstone	San Pedro								.08		.20	.02		.30	.15				.04		.88		.38			.50	.09	.15					2.79
Truxton	Colorado										T.	T.	.20	.12	.34							T.	T.			T.	T.	T.	T.				0.66
Tuba	Little Colorado.									T.	T.	.03	T.				.18		.06				T.					.10	T.				0.37
Tucson	Santa Cruz								T.			T.			.06			.15	T.		.43	.08	.24	.23		T.	.02	.70					2.06
Tucson (1)	....do							.03										.09		.35		.36	.90	.07		.13		.71					2.64
Tucson (2)	....do									.01								.06		T.	.57	.06	.28	.38		.01		.42	T.				1.78
Vail	....do																			.30	.28	1.00				.01	2.05						3.64
Walnut Grove	Hassayampa																T.	T.				1.40	.23					.70	T.	T.			2.33
Wickenburg	....do																						.72			.10	.32	.01					1.15
Willcox	Desert									.10	.18										.22		.13		.18		T.						0.81
Williams	Colorado										.14		.47			.10						.12	.20			.66	.24						1.93
Winslow	Little Colorado.								T.	.49	T.		T.		T.						.25	.18			T.	.36		T.					1.28
Yuma	Colorado													.01																			0.01
Yuma (1)	....do																																0.00
Nevada.																																	
Caliente	Colorado																												.01				0.01
Logan	....do																																0.00

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 9, Colorado Valley.*

Date.	Wyoming.				Colorado.										Utah.										New Mexico.			
	Daniel.		Green River.		Durango.		Grand Junction.		Gunnison.		Meeker.		Steamboat Springs.		Emery.		Fort Duchesne.		Hite.		Moab.		St. George.		Fort Bayard.		Bloomfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	78	31	81	41	84	47	95	63	76	33	84	41	80	31	81	49	96	43	102	64	99	51	100	53	92	61	97	48
2....	62	42	79	41	82	49	90	63	75	41	79	55	77	36	82	46	90	46	100	80	93	70	98	65	91	59	90	54
3....	70	33	80	38	81	47	88	54	70	40	76	36	78	27	80	40	88	39	100	65	96	50	99	57	88	58	95	49
4....	74	34	86	43	81	45	92	67	74	36	82	44	80	35	79	41	94	49	97	68	98	60	98	60	89	57	93	47
5....	73	38	87	46	84	44	94	64	73	34	83	44	85	34	79	43	97	46	100	73	98	61	99	57	92	60	94	47
6....	76	31	89	44	83	44	91	58	78	33	81	50	80	35	80	47	90	46	99	64	99	54	99	57	92	57	97	48
7....	80	40	88	49	86	43	96	61	81	34	84	48	87	29	83	49	97	40	101	62	98	51	100	52	98	61	97	47
8....	78	36	89	44	87	46	96	62	79	36	86	39	86	30	85	46	99	41	101	64	101	51	102	62	95	59	97	51
9....	81	31	85	42	86	51	91	69	82	32	82	43	83	34	82	45	96	46	98	77	101	68	96	63	93	57	99	57
10....	78	37	86	42	82	53	86	66	83	34	80	45	76	50	81	47	90	56	92	75	92	67	98	59	.....	61	89	54
11....	77	33	86	44	77	49	84	63	76	39	75	57	77	47	85	48	89	55	92	66	93	57	97	67	.....	60	84	51
12....	78	31	85	41	77	55	81	59	74	42	72	50	75	42	82	46	87	51	93	68	89	66	97	72	.....	59	86	52
13....	78	33	89	48	80	47	87	58	81	40	76	44	82	40	85	49	93	44	95	64	94	55	95	65	.....	57	90	49
14....	80	36	92	50	86	51	93	62	83	35	81	42	86	34	84	45	94	46	101	65	100	56	98	64	.....	58	93	57
15....	80	35	90	49	87	54	94	65	84	41	79	46	86	37	86	43	97	51	102	69	101	60	101	60	91	60	93	62
16....	83	33	91	49	86	56	94	67	79	42	82	53	83	47	82	45	96	54	102	70	100	62	101	59	92	62	93	60
17....	85	35	94	48	88	54	97	66	81	41	82	49	86	39	80	46	100	50	106	72	102	60	103	56	91	59	96	57
18....	84	35	93	47	83	56	93	68	80	43	85	46	86	42	79	45	98	52	101	80	101	69	102	73	90	60	91	59
19....	83	33	94	52	89	52	96	68	83	41	87	50	88	41	83	47	100	52	103	75	104	62	104	67	89	62	95	59
20....	76	35	89	53	83	58	88	68	82	42	75	50	76	50	81	40	98	60	103	75	100	61	101	67	87	59	92	65
21....	75	36	86	40	80	56	83	64	70	50	75	46	79	40	85	43	94	51	98	77	94	65	99	70	90	55	90	55
22....	76	21	78	50	65	54	84	59	69	51	79	46	76	48	81	45	92	54	90	70	93	62	96	70	78	60	74	58
23....	75	34	82	42	70	48	86	57	70	40	75	42	74	37	83	40	90	47	93	63	91	55	96	64	79	54	81	54
24....	69	30	76	44	78	47	85	61	65	36	74	35	75	31	86	47	85	42	97	65	93	54	97	59	81	54	88	55
25....	74	25	73	33	76	47	88	57	71	35	77	35	75	25	81	44	90	38	98	65	95	50	99	52	76	53	86	55
26....	68	25	80	35	79	44	91	58	75	30	77	35	78	25	83	45	91	39	98	67	95	57	96	61	81	51	86	53
27....	74	24	80	43	67	48	87	59	66	40	71	41	77	30	82	41	90	39	90	70	95	60	94	65	78	53	68	55
28....	73	27	84	35	72	41	86	54	63	32	78	39	78	28	85	43	90	41	94	61	92	51	96	58	78	52	80	46
29....	74	30	84	37	77	42	87	56	79	29	75	40	80	29	82	45	92	41	96	61	93	51	98	60	76	50	85	49
30....	76	32	86	38	83	46	90	59	81	31	80	41	83	32	81	40	95	40	100	60	97	52	100	53	81	51	89	44
31....	87	31	89	42	85	48	92	60	75	36	82	41	83	32	83	45	96	43	.....	.....	98	55	100	50	83	53	90	48
Mns..	76.4	32.5	85.5	43.5	80.8	49.1	89.8	61.8	76.1	37.7	79.2	44.3	80.5	36.0	82.3	44.7	93.4	46.5	98.9	68.7	96.6	58.2	33.7	61.9	•96.8	57.2	89.6	53.1

Date.	Arizona.																						Logan, Nev.	
	Bisbee.		Flagstaff.		Fort Apache.		Grand Canyon.		Parker.		Phoenix.		Prescott.		St. Michaels.		San Carlos.		Tucson.[3]		Yuma.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	86	64	80	43	91	53	81	56	108	75	104	75	86	56	86	52	108	53	103	70	108	79	107	60
2	87	67	76	54	91	53	80	56	108	67	102	76	85	59	90	56	102	59	100	76	108	80	106	60
3	86	67	77	45	88	55	81	57	106	67	102	71	84	48	84	56	102	58	101	70	106	70	96	60
4	89	69	78	44	89	50	82	56	107	67	102	71	86	56	85	54	104	56	102	68	105	68	106	65
5	90	64	80	45	90	48	80	58	106	70	104	72	88	48	90	60	103	51	103	67	107	67	104	62
6	90	64	80	44	90	50	81	57	108	65	103	69	88	48	90	50	105	48	104	66	106	68	103	60
7	89	69	81	44	89	50	79	57	108	65	105	71	88	54	90	50	106	49	104	72	110	70	106	60
8	89	69	81	47	91	52	79	56	110	67	102	76	88	54	89	55	106	58	102	76	107	74	105	60
9	86	62	78	51	95	50	78	55	105	60	99	76	84	61	90	56	103	70	98	70	105	78	105	63
10	86	61	68	48	98	53	61	51	105	60	97	71	83	63	84	54	100	58	98	71	106	72	103	65
11	82	62	76	46	96	58	71	41	108	60	100	71	84	52	83	48	101	62	96	73	108	68	105	62
12	82	64	74	44	95	57	61	50	105	60	101	74	83	52	85	51	99	59	99	72	107	73	102	60
13	84	64	79	43	94	56	66	48	108	60	102	74	86	53	81	48	101	60	100	72	107	74	103	66
14	85	64	81	48	93	53	72	51	112	60	104	76	88	56	85	52	109	66	103	73	107	76	106	68
15	82	65	82	50	96	56	75	53	113	60	107	78	91	58	86	53	113	74	107	80	110	73	106	65
16	88	67	84	48	98	58	78	53	116	68	108	77	92	55	88	54	111	70	104	77	110	72	110	64
17	89	63	84	54	100	58	81	57	110	60	106	83	91	67	88	57	109	70	105	70	109	80	110	67
18	91	65	82	50	101	54	83	58	116	69	106	78	94	59	89	60	109	63	105	67	108	79	110	70
19	90	67	82	49	102	58	82	59	115	72	108	82	90	57	88	55	108	65	104	76	111	78	110	73
20	85	63	81	53	95	56	73	59	107	67	102	80	85	62	86	56	105	70	102	69	104	80	108	70
21	76	60	69	54	90	56	72	47	106	69	88	73	88	60	80	50	93	69	90	69	104	83	105	70
22	74	62	67	47	86	54	65	50	106	72	96	72	79	56	73	57	91	66	91	68	105	81	104	80
23	78	60	75	46	84	59	74	46	106	65	98	69	81	51	80	50	105	59	93	66	106	78	103	65
24	82	62	75	44	85	49	78	48	106	65	102	75	82	53	79	46	101	56	99	69	111	72	105	65
25	78	62	75	52	85	51	80	51	107	65	97	79	80	58	80	53	96	64	97	72	110	74	104	65
26	80	58	70	46	85	53	74	51	106	62	97	66	78	58	82	46	97	66	95	66	105	75	97	70
27	76	57	70	44	82	51	74	48	103	62	93	66	73	50	73	52	96	62	92	67	103	76	100	63
28	79	60	74	42	85	48	76	46	104	62	97	73	81	48	77	43	98	66	93	66	104	70	100	65
29	80	60	76	44	88	49	80	47	112	62	102	72	84	50	80	44	101	68	98	67	110	71	104	71
30	82	60	78	41	90	47	81	49	114	62	104	75	86	51	85	47	105	67	101	67	114	71	105	67
31	86	61	82	44	90	49	81	50	115	65	106	72	87	51	86	46	107	70	102	65	111	73	107	68
Mns.	84.1	63.3	77.3	46.9	91.4	53.0	76.1	52.3	108.6	64.8	101.4	74.0	85.3	55.0	84.3	52.0	103.0	62.3	99.7	70.2	107.5	74.3	104.7	65.5

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT NO. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

GENERAL SUMMARY.

During August the weather was abnormally dry, there being very few local storms, and on the average only 2 rainy days in the district. In the Utah area 30 stations out of 73 reported no rain or only a trace, while in the remaining portion of the district precipitation fell in measurable quantities at only 9 stations. At those stations having long records, only 1 reported an amount above normal.

The temperature for the district averaged below normal. Light frosts were frequent in the mountain districts, but only slight damage was reported.

The average cool weather seemed to have no deterrent effects on agriculture, and the lack of moisture was not felt so much in the agricultural districts as on the ranges. Cattle, however, suffered but little, as springs held out well, giving them plenty of drinking water. In the agricultural sections the snows of the past winter furnished ample water for irrigation and power purposes.

The average number of rainy days was 2, clear days 21, partly cloudy days 7, and cloudy days 3.

TEMPERATURE.

The temperature for the district averaged 2.1° below normal. The highest monthly mean was 83.6° at Wendover, Utah, and the lowest was 54.9° at Tahoe, Cal. As a rule the highest means occurred on the western slope of the Wasatch Mountains in the Utah area, and in southern Nevada; while the lowest means were reported in the Oregon area and at the elevated stations in the California and Utah areas.

While the district average was below normal, the mean monthly temperature at the several stations varied greatly from the normal. Of the 47 stations having records long enough to compute normals, only 13 reported plus departures and these are located in western Utah and eastern Nevada. The greatest plus departure was 2.9° at Mount Nebo, Utah, and at Ely, Nev. The greatest negative departures occurred in central Nevada.

Chronologically the temperatures were quite even, there being no well-defined period of warmth or coolness for the district as a whole. But in the eastern half of the district that period extending from the 1st to the 21st was warmer than the remaining portion of the month; while in the western part there were no hot periods over any considerable area.

The highest temperatures occurred generally from the 16th to the 19th, the highest reported being 110° on the 17th at Corinne, Utah. The lowest temperatures occurred on various dates, although the most common were the 21st and 25th, the lowest reported being 23° on the 21st at Cokeville, Wyo.

PRECIPITATION.

The average precipitation for the district was 0.28 inch, which is about 0.61 inch below the normal. Over immense areas little or no moisture fell during the entire month. The heaviest amounts fell in the southern portion of the Utah area, but only at one station was an amount above normal recorded. In Nevada the average precipitation for August was the lowest since 1892.

What rain fell occurred at irregular intervals, and resulted for the most part from local storms.

No snow fell during this month.

VALUE OF MOUNTAINS TO CLIMATIC SAFETY FOR THE FRUIT GROWER.

By J. CECIL ALTER, Observer.

Located beneath peaks of almost perpetual snow and amidst topographic conditions tending to accentuate the vagaries of a mountain climate, there are in Utah numerous valleys, in the neighborhood of three-quarters of a mile above sea-level, that have climates of rare equability and gentleness; where the summer temperatures partake scarcely at all of the character of those on the unsheltered Great Basin plains, and where the winter cold is crisp but not intense.

Abandoning our old beliefs in a vicious rugged climate born of the snowcapped mountains, we begin to comprehend the fact that mountains, having certain favorable configurations, are actual assets, and not encumbrances, as weather producers and regulators, forming unique protection against the vicissitudes of climate so often found where the elevation tends to expose and not protect.

PROTECTION FROM LATE SPRING FROSTS.

The greatest weather enemy in all fruit districts, east and west, is the late, vagrant spring frost, which occurs under the immense high-air pressures that occasionally form over the United States in the late spring. These untimely frosts kill the fruit buds, after all nature has apparently concluded that spring has safely arrived.

In mountainous districts the maximum action of these frost-producing high-pressure areas is considerably hindered, but it is unmitigated in the Plains States and in the East. The dangerous sap-starting warm periods of winter occur in the mountains from the same sort of low-barometer area as in the Mississippi Valley and in the East, but their advance is greatly retarded and their effect minimized by the high mountain peaks and the general elevation of the land. A winter warm spell of sufficient length to start the sap practically never occurs in the mountain valleys, where a more equable condition of the storm-carrying atmosphere is enforced by the impeding mountains.

MOUNTAIN SHADOWS AN ADVANTAGE.

A greater influence for good, however, from the mountains, in favor of the fruit grower, is the shortening of the daylight; that is, the delaying of the morning sunshine and the advancing of the evening shadows, both of which are important aids in delaying the opening of fruit buds until spring has actually arrived. It will be seen that southerly exposures, which offer no such shadow protection from mountains to the east and west, will permit a much earlier budding of the fruit, and will thus increase the probability of loss by subsequent freezes. In valleys with a north-and-south trend this shadow protection for orchards on the east side of the valley amounts to from 30 minutes to 2 hours in the morning. This shortens the daily number of hours of sunshine on the orchards, and consequently delays the time of budding and blooming until a safer part of the season.

In this connection it is interesting to note that these same mountain shadows are every spring the means of saving a great deal of fruit that has been frosted and would be lost if the full might of the sunshine were thrown upon the frozen buds immediately after sunrise. It is well known that a fruit bud can withstand a temperature considerably below freezing for a great length of time providing it be thawed out slowly. The eastern orchardist has no protection from the sudden thawing of the buds, which results in so much damage; but the orchard that lies in the shadow of the mountains until the more distant valley air has been warmed in the sunshine, and has gradually flowed across to the mountain-shaded orchard to thaw the frozen buds gradually, recovers safely from a freeze that otherwise would prove disastrous.

INFLUENCE OF AIR DRAINAGE.

There is still another arm of safety that the mountain extends out over the orchards at its foot—one that has blessed into fruitage thousands of acres amidst weather conditions that have ruined many less-favored regions—and that is air drainage; the helpful influence of a steady stream or current of air, which usually flows down the mountain slope all night, ceasing only when the morning sun appears and changes the direction of flow. As soon as darkness overspreads the valley in the evening, the cool air begins to settle into the lowest places and to become quiet. Under a clear sky it will gradually grow cooler by radiation until morning, and for this reason the valley bottoms, where the quiet, cool air settles at night, are avoided by orchardists. Gradually during the night the lower parts of the valley fill with cold air, and this dead-air district enlarges and creeps up the slopes as the slowly cooling air from the mountain flows down by reason of its greater density.

The final freeze in the fruit bud, or the actual formation of the ice crystals, is an action of quietude, and it is greatly hindered and delayed by constant motion of the air. Ice may form in perfectly quiet air at 32° F., but if the air be in motion ice may not form on an object in the free-moving air until the temperature is several degrees lower. And if the atmospheric activity be persistent during the cold spell and the temperature drop not too great, the simple phenomenon of the air flowing down the slope through the orchards will prevent the formation of ice, or frost crystals, and thus the buds may show the effect of a temperature not lower than 34° after actually experiencing a 26° temperature.

HUMIDITY AND EVAPORATION.

Finally, the phenomenon of freezing the fruit buds, or of frost formation, takes place in a quiet air at a temperature of 32° F. only when the bud is saturated with moisture and when there is considerable moisture in the air to prevent the rapid escape of the bud moisture. The noteworthy dryness of the air which generally prevails in the Rocky Mountain districts, therefore, of itself, acting alone, is an influence that has many times prevented the formation of frost in the fruit buds even when the actual temperature of the surrounding dry, quiet air was several degrees below freezing.

TABLE 1.—*Climatological data for August, 1911. District No. 10, Great Basin.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Wyoming.																				
Border	Uinta	6,085	10	59.2[b]	− 1.2	93	17†	25	21	62[b]	0.00	− 1.00	0	0	0	31	0	0	w.	S. W. Condron.
Cokeville	do	6,204	1	56.6[b]	.....	89	16†	23	21	54	0.06	.....	.06	0	1	30	1	0	w.	E. J. Tuckett.
Evanston	do	6,860	14	59.6	− 1.4	88	19	30	26†	48	0.00	− 0.92	0	0	0	31	0	0	sw.	Frank Tucker.
Idaho.																				
Geneva	Bear Lake		3								0.03	.....	0.03	0	1	31	0	0	.....	F. W. Boehme.
Grace	Bannock	5,400	5	64.5	.....	94	19	33	21	51	0.00	.....	0.00	0	0	25	6	0	n.	Harold Cole.
Paris	Bear Lake	5,946	17	60.6	− 2.1	85	9†	28	21	50	0.00	− 0.85	0.00	0	0	21	10	0	w.	John Norton.
Weston	Oneida	4,460	13	64.8	− 2.0	93	19	34	21†	49	0.00	− 1.03	0.00	0	0	31	0	0	sw.	W. T. Chatterton.
Utah.																				
Alpine	Utah	4,900	14	.....	.....	.....	.....	.....	.....	.....	0.00	− 1.43	0.00	0	0	25	5	1	.....	T. F. Carlisle.
Beaver	Beaver	6,000	8	68.6	.....	88	17	48	3†	34	0.84	.....	0.18	0	7	12	19	0	sw.	James Connell.
Black Rock	Millard	4,872	11	69.7	.....	98	17†	41	3†	50	0.46	.....	0.46	0	1	14	16	1	.....	W. D. Livingston.
Burrville	Sevier			62.4	.....	92	3†	35	3†	57	0.62	.....	0.16	0	5					F. R. Curtis.
Castle Rock	Summit	6,244	8	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	31	0	0	sw.	David Moore.
Cedar City	Iron	5,750	6	72.9	.....	91	17	52	27	31	0.22	.....	0.16	0	3	16	10	5	se.	Parley Dalley.
Center	Toole			67.2[d]	.....	98	17†	.....	.....	.....	0.21	.....	0.21	0	1	27	4	0	n.	L. C. Peterson.
Clarkston	Cache			.....	.....	.....	.....	.....	.....	.....	0.04	.....	0.04	0	1	20	11	0	.....	W. J. Griffiths.
Corinne	Boxelder	4,240	41	76.0	+ 1.6	110	17	40	25†	61	0.00	− 0.57	0.00	0	0	28	2	1	.....	A. C. Murphy.
Deseret	Millard	4,541	17	73.3	+ 2.3	97	17†	45	3†	47	0.12	− 0.37	0.08	0	3	27	2	2	s.	Samuel W. Western.
Enterprise	Washington	4,270	3	.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	0	0	13	18	0	s.	John Day.
Fairfield	Utah	4,866		.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	0	1	25	6	0	sw.	W. Harden Ashby.
Farmington	Davis	4,267	11	70.1	− 0.3	97	19	43	25	40	0.00	− 0.96	0.00	0	0	31	0	0	sw.	Charles Boylin.
Fillmore	Millard	5,100	21	76.3	+ 2.0	102	17	47	26	45	0.11	− 0.72	0.04	0	4				.....	J. J. Starley.
Frisco	Beaver	7,318	17	69.5	− 2.2	97	18	40	6†	49	0.18	− 1.00	0.13	0	3				.....	Essen Nordberg.
Garrison	Millard		8	70.8	.....	95	20	43	25	45	T.	.....	T.	0	0	27	2	2	s.	E. M. Smith.
Government Creek	Tooele	5,277	11	71.6	− 0.2	97	17†	42	21	42	0.00	− 1.15	0.00	0	0	27	0	4	s.	Walter James.
Grantsville	do		2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	23	7	1	s.	J. C. Woodmansee.
Grouse Creek	Boxelder			.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	22	8	1	nw.	Philip Paskett.
Heber	Wasatch	5,606	18	63.0	− 1.7	94	19	30	25	53	0.15	− 0.82	0.05	0	3	30	1	0	s.	John Crook.
Henefer	Summit	5,301	12	62.1	− 1.9	94	18	29	25†	58	0.31	− 0.83	0.20	0	1	19	12	0	nw.	William Brewer.
Hooper	Weber	4,436		.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0				.....	T. M. Jones, jr.
Ibapah (near)	Tooele	7,500	6	65.8	.....	88	17†	37	5	41	0.10	.....	0.10	0	1	27	4	0	.....	J. S. Lawton.
International	do	5,370		.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	0	0	28	3	0	se.	I. S. R. Co.
Iosepa	do			76.5	.....	102	9	42	25	49	T.	.....	T.	0	0	18	10	3	s.	George K. Hubbell.
Joy	Juab			71.7	.....	96	17	40	5	50	T.	.....	T.	0	0	19	12	0	s.	Samuel Hagans.
Kanosh	Millard	5,250	3	.....	.....	.....	.....	.....	.....	.....	0.26	.....	0.12	0	3				.....	George Crane.
Kelton	Boxelder	4,230	33	68.2	− 6.4	92	6†	38	21	44	0.00	− 0.20	0.00	0	0	21	10	0	s.	F. W. Klock.
Lemay	do			81.9	.....	98	19	55	29	31	0.00	.....	0.00	0	0	20	11	0	w.	Agent S. P. Co.
Levan	Juab	5,010	21	70.6	+ 0.8	98	19	44	25	44	0.10	− 0.83	0.07	0	3	24	4	3	sw.	William Brown.
Logan	Cache	4,507	20	69.2	− 1.4	90	17†	46	21†	34	0.00	− 0.80	0.00	0	0				.....	Utah Exp. Station.
Low	Tooele			77.4	.....	99	19	46	31	44	0.00	.....	0.00	0	0	29	2	0	s.	T. G. Morris.
Lucin	Boxelder	4,504	7	71.5	.....	99	9	41	7†	58	T.	.....	T.	0	0	28	2	1	.....	C. J. Burke.
Lund	Iron	5,086	...	70.6[d]	.....	96	17†	45	26	47[d]	0.16	.....	0.16	0	1	8[e]	18[e]	2[e]	sw.	Job F. Hall.
Manti	Sanpete	5,575	17	67.4	.....	95	17	39	3†	44	0.19	.....	0.06	0	4	14	3	14	.....	J. M. Anderson.
Maple Creek	Utah			.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.23	0	1	21	10	0	.....	Lewis W. Gillilan.
Marion	Summit	6,750	7	.....	.....	.....	.....	.....	.....	.....	0.14	.....	0.08	0	4	11	12	8	s.	James Woolstenhulme.
Marysvale	Piute	6,180	12	65.8	+ 0.6	91	17†	40	3†	45	0.79	− 0.94	0.32	0	8	8	11	12	sw.	John W. Henry.
Meadowville	Rich	6,200	12	62.4	− 1.5	91	17	33	21	49	T.	− 1.07	T.	0	0	30	1	0	w.	J. S. Moffat.
Mercur	Tooele			.....	.....	.....	.....	.....	.....	.....	0.12	.....	0.07	0	2	7	24	0	nw.	T. H. Franklin.
Midlake	Boxelder			76.2	.....	88	17	64	24	16	0.00	.....	0.00	0	0	31	0	0	.....	Agent S. P. Co.
Milford	Beaver	4,962	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. F. Aller.
Millville	Cache	4,848	16	.....	.....	.....	.....	.....	.....	.....	0.05	− 0.88	0.05	0	1	22	9	0	sw.	Fred Yeates.
Minersville	Beaver	5,070	14	.....	.....	.....	.....	.....	.....	.....	0.03	− 0.89	0.02	0	2				.....	George Roberts, sr.
Modena	Iron	5,479	11	69.6	+ 1.0	91	18	44	25	42	0.52	− 1.31	0.44	0	2	19	12	0	sw.	U. S. Weather Bureau.
Morgan	Morgan	5,068	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. Visick.
Moroni	Sanpete	5,519	3	69.4	.....	91	17†	46	25†	37	0.14	.....	0.10	0	2	16	9	6	sw.	B. F. Ellason.
Mosida	Utah			.....	.....	.....	.....	.....	.....	.....	0.26	.....	0.26	0	1	23	8	0	ne.	Roy P. Curtis.
Mount Nebo	do	4,650	10	76.2	+ 2.9	98	19	51	2	38	T.	− 0.45	T.	0	0	24	7	0	s.	D. C. Walkey.
Nephi (near)	Juab		8	.....	.....	.....	.....	.....	.....	.....	0.28	.....	0.28	0	1	.....	.....	.....	.....	S. Boswell.
Newcastle	Iron			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. W. Jones.
Oak City	Millard	4,900	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Nielson.
Ogden	Weber	4,310	10	71.2	− 5.5	98	14	36	24	41	0.35	− 0.22	0.35	0	1	22	8	1	s.	A. Van De Graff.
Park City	Summit	7,800	14	64.2	+ 2.1	90	17	35	21†	48	0.15	− 0.76	0.10	0	2	20	7	4	.....	Gertrude Evans.
Park Valley	Boxelder			.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	26	5	0	nw.	Thomas Stirland.
Parowan	Iron	5,970	20	68.2	− 1.2	90	20†	43	9	40	0.22	−1.07	0.12	0	2	20	0	11	.....	Scott Matheson.
Payson	Utah	4,637	8	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.40	0	2	21	8	2	nw.	D. L. Coombs.
Pelican Point	do	4,600		.....	.....	.....	.....	.....	.....	.....	0.24	.....	0.24	0	1	26	5	0	.....	B. M. Mendenhall.
Pine Cliff Ranch	Summit			.....	.....	.....	.....	.....	.....	.....	0.15	.....	0.07	0	3				.....	L. E. Leavitt.
Pinto	Washington	5,907	15	63.6	− 1.2	87	18†	38	24	44	1.84	− 0.09	0.73	0	3	15	13	3	s.	J. H. Harrison.
Promontory	Boxelder	4,913	40	.....	.....	.....	.....	.....	.....	.....	T.	− 0.34	T.	0	0				.....	F. C. Houghton.
Provo	Utah	4,532	23	68.6	− 2.1	98	17†	36	25	54	0.05	− 0.50	0.05	0	1	10	21	0	n.	James A. Oliver.
Randolph	Rich	6,442	9	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	0	1	25	2	4	sw.	William Rex.
Revier	Salt Lake			.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	0	0				.....	E. L. Terry.
Richfield	Sevier	5,350	21	67.6	− 1.7	95	7†	44	4†	51	0.75	+ 0.08	0.45	0	2	1	6	4	.....	Joseph J. Jensen.
Saltair	Salt Lake	4,220	9	74.4[a]	.....	89	9†	52	25	27	0.00	.....	0.00	0	0				.....	E. J. Bench.
Salt Lake City	do	4,360	38	74.8	− 0.7	96	18	52	25	33	0.05	− 0.73	0.04	0	2	24	7	0	se.	U. S. Weather Bureau.
Sciplo	Millard	5,260	18	67.7	− 0.9	94	17†	34	25	53	0.29	− 0.74	0.12	0	3	18	5	8	sw.	Thomas Memmott.
Silver City	Juab	6,127	2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	25	6	0	sw.	J. L. Stark.
Spanish Fork	Utah	4,585	2	74.8	.....	101	17†	47	3	43	0.05	.....	0.05	0	1	20	10	1	.....	W. P. Shippee.
Strawberry Tunnel	do	7,650	6	61.7	.....	88	19	35	25	42	1.56	.....	0.83	0	5	17	13	1	.....	F. W. Cater.
Thistle	do	5,075	20	65.4	− 4.2	104	19	29	29	60	T.	− 1.02	T.	0	0	11	19	1	sw.	John Thorgeirson.
Tooele	Tooele	4,900	16	73.8	+ 1.1	99	16†	50	21†	42	0.06	0.87	0.06	0	1	10	13	8	ne.	E. A. Bonelli.
Utah Lake Pumping Station.	Utah	4,500	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. A. Knight.
Vernon	Tooele			.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	0	0	25	6	0	sw.	Glynn Bennion.
Wendover	do			83.6	.....	101	18	55	28†	39	0.00	.....	0.00	0	0	26	3	2	w.	J. S. Cooper.
Whisky Creek	Millard			.....	.....	.....	.....	.....	.....	.....	0.18	.....	0.18	0	1	.....	.....	.....	.....	T. B. Perkins.
Woodruff	Rich	6,500	13	58.4	− 2.0	90	18†	24	30	60	0.00	− 0.46	0.00	0	0	23	7	1	sw.	J. Sidney Pusey.
Oregon.																				
Burns	Harney	4,157	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[f]J. C. Welcome, jr.
Cliff	Lake	4,300	4	57.0	.....	90	30	24	20	58	0.18	.....	0.15	0	2	20	9	2	n.	John C. Green.
Paisley	do	4,500	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[f]E. C. Woodward.
Silver Lake	do	4,700	14	61.0	+ 0.1	91	9†	31	5†	53	T.	− 0.32	T.	0	0	11	19	1	nw.	L. W. Charles.

TABLE 1.—*Climatological data for August, 1911. District No. 10*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California.																				
Glen Alpine	Eldorado	6,850	1	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	24	7	0	s.	Carl Fluegge.
Tahoe	Placer	6,240	1	54.9	.....	78	31	33	20†	41	0.00	.....	0.00	0	0	31	0	0	w.	R. M. Watson.
Truckee	Nevada	5,819	40	65.6	+ 2.2	85	29	38	20†	42	0.00	− 0.08	0.00	0	0	8	23	0	.....	Southern Pacific Co.
Nevada.																				
Austin	Lander	6,594	22	67.2	− 1.1	89	4	41	23	47	0.05	− 0.59	0.05	0	1	30	0	1	nw.	F. O. Booe.
Battle Mountain	....do	4,843	40	.....	.....	.....	.....	.....	.....	.....	0.00	− 0.10	0.00	0	0	31	0	0	sw.	Southern Pacific Co.
Beowawe	Eureka	4,905	40	66.0	− 9.1	95	6†	37	12	54	0.00	− 0.14	0.00	0	0	31	0	0	n.	Do.
Carlin	Elko	5,232	40	65.4	− 3.7	101	29	30	19†	65	0.00	− 0.14	0.00	0	0	31	0	0	.....	Do.
Carson Dam	Churchill	4,032	4	71.1	.....	99	16	43	20	44	0.00	.....	0.00	0	0	29	2	0	w.	U. S. Reclamation Service.
Cherry Creek	White Pine	6,450	3	68.1	.....	94	18†	42	26	45	0.00	.....	0.00	0	0	24	7	0	w.	J. H. Leishman.
Clover Valley	Elko	6,000	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. F. Wiseman.
Cobre	....do	.....	2	.....	.....	.....	.....	27	28	.....	0.00	.....	0.00	0	0	30	0	1	sw.	Southern Pacific Co.
Columbia	Esmeralda	5,750	4	72.3	.....	97	19	50	23†	41	0.00	.....	0.00	0	0	31	0	0	se.	A. Booth.
Dutton	Elko	5,100	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Golconda Cattle Co.
Elko	....do	5,342	40	62.7	− 5.4	96	12	30	25	61	T.	− 0.31	T.	0	0	.....	.....	.....	w.	E. J. Clark.
Ely	White Pine	6,421	20	67.5	+ 2.9	93	20	41	25	47	0.00	− 1.07	0.00	0	0	28	3	0	w.	G. C. Hunting.
Eureka	Eureka	6,500	8	68.0	.....	93	19	40	24	46	0.00	.....	0.00	0	0	26	4	1	s.	Clay Simms.
Fallon	Churchill	3,965	6	69.4	.....	96	27	42	21	47	0.00	.....	0.00	0	0	30	1	0	ne.	U. S. Experiment Station.
Fernley	Lyon	4,200	38	71.2	− 4.0	98	30	39	15	50	0.00	− 0.27	0.00	0	0	31	0	0	.....	Mrs. G. A. Steele.
Gardnerville	Douglas	4,830	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Dangberg.
Geyser	Lincoln	.....	7	63.4	.....	91	14	36	3	50	T.	.....	T.	0	0	18	12	1	s.	Mrs. J. F. Wamboldt.
Glenbrook	Douglas	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. C. Henningsen.
Golconda	Humboldt	4,697	32	61.2	−11.4	90	1†	41	21†	46	0.00	− 0.12	0.00	0	0	28	3	0	nw.	Southern Pacific Co.
Halleck	Elko	5,631	18	61.8	− 5.1	95	17	28	24	63	0.00	− 0.20	0.00	0	0	31	0	0	.....	Do.
Jean	Clark	2,074	3	.....	.....	105	17†	.....	.....	.....	0.00	.....	0.00	0	0	31	0	0	sw.	Salt Lake Route.
Lahontan	Churchill	.....	0	76.2	.....	97	30	52	15	41	0.00	.....	0.00	0	0	28	3	0	w.	U. S. Reclamation Service.
Lewers's ranch	Washoe	5,500	23	64.2	− 3.9	90	27†	39	20	45	0.00	− 0.43	0.00	0	0	27	4	0	.....	Ross Lewers.
Lovelocks	Humboldt	3,977	17	65.1	−10.5	90	29	38	20	48	0.00	− 0.03	0.00	0	0	31	0	0	s.	C. H. Allender.
Millett	Nye	.....	3	64.2	.....	94	19	35	22	55	0.00	.....	0.00	0	0	28	3	0	s.	Fred J. Jones.
Mina	Mineral	4,600	4	75.0	.....	102	19	51	3†	47	0.00	.....	0.00	0	0	29	1	1	s.	Southern Pacific Co.
Potts	Nye	6,990	18	61.6	− 6.2	89	19	32	15†	54	0.00	− 0.66	0.00	0	0	18	10	3	s.	Miss Mamie Potts.
Quinn River ranch	Humboldt	4,850	9	65.2	.....	98	30	33	16†	60	T.	.....	T.	0	0	28	2	1	sw.	F. M. Payne.
Reno	Washoe	4,532	40	67.6	+ 0.6	93	29	42	20	45	T.	− 0.25	T.	0	0	31	0	0	w.	U. S. Weather Bureau.
Soda Lake	Churchill	4,534	4	70.7	.....	92	30	45	15	39	0.00	.....	0.00	0	0	28	3	0	nw.	U. S. Reclamation Service.
Tecoma	Elko	4,812	33	64.4	− 8.4	98	30	32	27	63	T.	− 0.25	T.	0	0	7	18	6	w.	Southern Pacific Co.
Tonopah	Nye	6,090	6	72.5	.....	92	19	55	2	28	0.00	.....	0.00	0	0	31	0	0	se.	U. S. Weather Bureau.
Wabuska	Lyon	4,347	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Vic Bernard.
Wells	Elko	5,631	39	65.1	− 3.5	92	31	33	9	51	0.00	− 0.15	0.00	0	0	16	14	1	.....	Southern Pacific Co.
Winnemucca	Humboldt	4,432	32	66.7	− 4.1	93	30	40	20	51	0.01	− 0.16	0.01	0	1	28	2	1	sw.	U. S. Weather Bureau.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 10, Great Basin.*

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																	
Border	Bear						.06																									0.06
Cokeville	do						.06																									0.06
Evanston	do																															0.00
Idaho.																																	
Geneva	Bear						.03																									0.03
Grace	do																															0.00
Paris	do																															0.00
Weston	do																															0.00
Utah.																																	
Alpine	Great Salt Lake.																															0.00
Beaver	Sevier Lake.										T.	....	.13	.15	.01	....	.16	....	.06	.15	T.	T.	.18					T.	T.			0.84
Blackrock	do										T.			T.								T.	.46								0.46
Burrville	do														.10						.10	.11	.15	.16								0.62
Castle Rock	Great Salt Lake.																															0.00
Cedar City	Desert																											.16	.03	.03		0.22
Center	do																			.21												0.21
Clarkston	Great Salt Lake.					.04																										0.04
Corinne	do																															0.00
Deseret	Sevier Lake.															T.				.02	....	.08	.02									0.12
Enterprise	Great Salt Lake.																											T.	T.	T.		T.
Fairfield	do					T.											T.				.05											0.05
Farmington	do																															0.00
Fillmore	Sevier Lake.														.02	.04			T.	.04	T.	T.	T.						.01			T.	0.11
Frisco	Desert																						.13						.04			.01	0.18
Garrison	do										T.																		T.			T.
Government Creek	do																															0.00
Grantsville	Great Salt Lake.																															0.00
Grouse Creek	Desert																															0.00
Heber	Great Salt Lake.						.05													.05				.05								0.15
Henefer	do		T.				.11									T.					.20											0.31
Hooper	do																															0.00
Ibapah (near)	Desert																					T.				.10						T.	0.10
Ibex	do																																
International	Great Salt Lake.																			T.													T.
Iosepa	Desert			T.																		T.										T.
Joy	do													T.						T.								T.			T.	T.
Kanosh	Sevier Lake.															.08						.12	.06									0.26
Kelton	Great Salt Lake.																															0.00
Lemay	Desert																															0.00
Levan	Sevier Lake.											T.		.02		.07			.01	T.									T.			0.10
Logan	Great Salt Lake.																															0.00
Low	do																															0.00
Lucin	Desert					T.																										T.
Lund	do																											T.	.16			0.16
Manti	Sevier Lake											T.	.05		.02	.06							.06									0.19
Maple Creek	Great Salt Lake.											T.			T.					(*)	.23	T.										0.23
Marion	do						.02					T.			T.						.03		.01									.08	0.14
Marysvale	Sevier Lake.												.06			T.	.01		.01	.31			.32	.01				.01	.06				0.79
Meadowville	Great Salt Lake.					T.																											T.
Mercur	do																				.07								.05				0.12
Midlake	do																																0.00
Milford	Sevier Lake.																																
Millville	Gr. S. Lake.						.05																										0.05
Minersville	Sevier Lake.								.01	T.	T.																		.02	T.			0.03
Modena	Desert																					T.					T.	.44	.08			T.	0.52
Morgan	Gr. S. Lake.																																
Moroni	Sevier Lake.											.10			T.				T.	.04			T.						T.				0.14
Mosida	Gr. S. Lake.															.26								T.									0.26
Mount Nebo	do															T.							T.						T.			T.	
Nephi (near)	do															.28						T.											0.28
Newcastle	Desert																																
Oak City	Sevier Lake.																																
Ogden	Gr. S. Lake.																								35								0.35
Park City	do																			.10		.05											0.15
Park Valley	Desert																																0.00
Parowan	do										.12											.10											0.22
Payson	Gr. S. Lake.							T.					T.							T.	.10		T.	.40									0.50
Pelican Point	do															.24																	0.24
Pine Cliff Ranch	do				.04							.04										.07											0.15
Pinto	Desert																										.73	.41	.70				1.84
Promontory	Gr. S. Lake.												T.																				T.
Provo	do																T.				.05												0.05
Randolph	do					.10	T.																			T.	T.						0.10
Revier	do					T.														T.													T.
Richfield	Sevier Lake.																			T.	.30	T.	.45										0.75
Saltair	Gr. S. Lake.																																0.00
Salt Lake City	do					.04										.01				T.													0.05
San Rafael	do																																
Scipio	Desert											T.		.06		.11				.12			T.						T.			T.	0.29
Silver City	do																																0.00
Spanish Fork	Gr. S. Lake.															.05				T.													0.05
Strawberry Tunnel	do										T.	.83	.14	T.	T.	.04	T.			.54	.01		T.									T.	1.56
Thistle	do											T.	T.			T.	T.	T.	T.	T.	T.		T.	T.									T.
Tooele	do						T.								T.					.06			T.										0.06
Utah Pumping Sta	do																																
Vernon	do					T.										T.																	T.
Wendover	do																																0.00
Whiskey Creek	Desert															T.					.18	T.											0.18
Woodruff	Gr. S. Lake.																																0.00

TABLE 2.—*Daily precipitation for August, 1911. District No. 10*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon.																																	
Adel	SE. drainage																																
Ana River	do																																0.00
Bear Valley	do																																0.00
Burns	do																																
Burns Mill	do																																0.00
Christmas Lake	do																																
Cliff	do					.15									.03																		0.18
Diamond	do																																0.00
Embody	do				T.										T.																		T.
Fort Rock	do				.05										T.																		0.05
Paisley	do																																
Seneca	do																																
Valley Falls	do																																0.00
California.																																	
Bijou	Truckee																																
Boca	do																																0.00
Deer Park	do																																0.00
Glen Alpine	do																																0.00
Hobart Mills	do																																0.00
Lundy	East Walker																											.15					0.15
McKinney	Truckee																																
Markleeville	East Carson																									T.	T.			T.			T.
Shields' Ranch	East Walker																											T.					T.
Silver Creek	East Carson																								T.		.02				T.		0.02
Tahoe	Truckee																																0.00
Tallac	do																																0.00
Truckee	do																																0.00
Woodfords	West Carson																																
Nevada.																																	
Arthur	Humboldt																																0.00
Austin	Reese															.05																	0.05
Battle Mountain	Humboldt																																0.00
Beowawe	do																																0.00
Bishop	do																																
Carlin	do																																0.00
Carson Dam	Carson																																0.00
Cherry Creek	Humboldt																																0.00
Clover Valley	do																																
Cobre	do																																0.00
Columbia	Desert																																0.00
Dry Farm	Humboldt																																
Dutton	do																																
Elko	do																												T.				T.
Ely	do																																0.00
Eureka	do																																0.00
Fallon	Carson																																0.00
Fernley	Truckee																																0.00
Gardnerville	Carson																																
Geyser	Humboldt																								T.								T.
Glenbrook	Truckee																																
Golconda	Humboldt																																0.00
Halleck	do																																0.00
Jean	Desert																																0.00
Lahontan	Carson																																0.00
Lewevs' Ranch	Truckee																																0.00
Lovelocks	Humboldt																																0.00
Massacre Lakes	Desert																																
Mill City	Humboldt																																0.00
Millett	Reese																																0.00
Mina	Desert																																0.00
North Fork	Humboldt					T.																											T.
Potts	Reese																																0.00
Quinn River Ranch	Humboldt					T.																											T.
Rebel Creek	do				T.	.23																											0.23
Reno	Truckee																											T.			T.		T.
Rose Creek	Humboldt																																0.00
Skelton	do																																0.00
Smith	West Walker																												T.	T.			T.
Spooner's Ranch	Truckee																																0.00
Soda Lake	Carson																																0.00
Tecoma	Humboldt					T.																											T.
Tonopah	Desert																																0.00
Wabuska	Walker																																
Wells	Humboldt																																0.00
Willow Point	Little Humboldt.																																0.00
Winnemucca	Humboldt					.01																							T.				0.01

* Precipitation included in that of the next measurement.
‡ Separate dates of fall not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 10, Great Basin.*

Date.	Wyoming.						Utah.																			
	Border.		Evanston.		Weston.		Corinne.		Deseret.		Government Creek.		Ibapah.		Marysvale.		Meadowville.		Modena.		Ogden.		Parowan.		Provo.		Salt Lake City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	83	31	80	40	85	40	102	47	94	57	93	51	75	43	85	43	82	36	88	53	88	51	81	45	95	42	90	62
2	82	47	78	38	77	50	100	58	82	58	83	52	76	44	78	57	72	45	86	55	85	49	84	49	82	55	75	62
3	78	32	73	33	80	41	98	47	88	45	85	48	75	44	82	40	77	38	85	46	84	51	82	49	87	39	84	56
4	80	34	76	42	84	42	95	51	91	58	89	51	76	45	85	51	81	40	85	54	88	53	84	51	90	46	85	65
5	80	36	78	38	83	45	92	48	90	57	93	52	78	37	84	57	81	45	84	51	87	54	83	50	92	54	85	60
6	86	37	75	45	77	46	94	52	85	59	82	47	80	47	82	46	75	46	86	51	91	57	82	50	85	48	79	59
7	85	36	81	40	87	41	96	53	92	48	92	58	81	52	85	41	84	35	86	50	95	60	85	50	94	40	93	60
8	87	35	82	41	88	45	100	68	93	56	93	60	84	48	86	44	85	40	87	52	96	58	85	51	95	46	93	70
9	89	36	83	42	88	45	101	52	92	58	91	60	83	57	84	51	86	41	84	54	93	55	84	43	95	47	93	72
10	88	35	81	38	85	45	98	58	90	60	90	59	82	56	84	49	83	41	84	57	90	52	83	45	92	50	85	67
11	87	36	80	41	86	45	105	53	90	61	89	56	81	54	85	45	85	43	84	50	94	53	84	50	94	50	89	66
12	86	39	79	42	88	51	102	68	91	52	88	53	80	52	85	50	84	44	85	54	95	55	87	61	90	48	88	68
13	86	34	80	40	87	50	100	64	85	56	87	62	81	54	84	46	84	47	83	54	96	57	82	49	92	47	89	65
14	86	31	83	43	88	52	100	65	91	54	90	58	84	57	85	44	87	54	86	52	98	57	82	50	95	47	91	68
15	.....	.....	82	50	88	53	100	63	93	57	93	60	86	57	90	45	86	51	88	54	94	60	87	58	95	48	88	69
16	.....	.....	85	42	90	47	108	58	95	59	94	60	85	56	90	48	87	56	90	51	92	57	86	58	96	50	93	66
17	93	39	87	48	92	50	110	55	97	58	97	64	88	57	91	48	91	57	91	51	92	54	88	58	98	48	94	67
18	92	36	87	43	92	45	106	54	96	60	96	64	88	54	89	54	90	42	91	59	94	58	83	54	98	50	96	73
19	93	41	88	45	93	49	108	58	97	65	97	67	83	53	91	46	90	45	91	60	95	55	89	57	97	55	95	74
20	87	40	84	47	87	47	102	58	95	59	91	63	87	57	87	52	83	52	90	59	97	59	90	57	97	54	86	66
21	87	25	80	33	81	34	107	46	86	59	84	42	81	43	84	54	72	33	87	62	96	60	90	58	88	43	80	55
22	81	31	78	43	85	46	96	53	84	55	84	54	80	45	78	52	80	49	85	58	96	60	82	56	89	52	82	65
23	78	30	75	36	84	38	92	46	88	49	87	49	81	47	82	49	78	39	86	50	90	57	83	53	89	42	81	58
24	74	34	74	32	78	42	89	52	83	60	79	44	84	51	79	45	69	38	83	54	71	36	85	45	83	41	76	56
25	77	26	74	31	80	34	90	40	86	59	84	44	86	56	82	40	76	33	86	44	73	39	86	51	86	36	81	52
26	78	29	75	30	84	40	97	41	88	59	85	49	83	42	81	51	77	45	85	53	77	43	82	53	86	39	82	57
27	79	29	76	34	83	39	95	40	87	59	83	48	80	47	81	46	77	34	84	51	81	48	82	53	86	37	80	56
28	82	30	78	30	85	38	96	43	90	54	86	54	80	46	81	41	83	38	81	52	82	50	80	52	87	38	88	57
29	82	32	78	38	85	44	99	52	88	60	87	56	80	48	81	44	84	44	84	50	83	53	87	49	90	43	86	64
30	86	36	80	39	85	42	98	48	92	45	88	55	80	49	86	41	80	44	87	50	82	56	88	51	93	43	87	62
31	89	35	79	41	91	42	96	46	92	59	88	54	80	57	82	46	81	40	85	54	82	53	86	50	90	46	88	60
Mns..	84.2[b]	34.2[b]	79.6	39.5	85.4	44.1	99.1	52.8	90.0	56.6	88.6	54.7	81.5	50.2	84.2	47.3	81.6	43.1	86.0	53.1	88.9	53.5	84.6	51.8	91.2	45.9	86.5	63.1

Date.	Burns, Oreg.		Nevada.																							
			Elko.		Ely.		Eureka.		Fallon.		Jean.		Lovelocks.		Millett.		Mina.		Quinn River Ranch.		Reno.		Tecoma.		Tonopah.		Winnemucca.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	.....	.....	87	36	85	50	88	48	93	49	101	.....	85	47	87	40	95	59	86	52	84	52	90	46	87	61	87	47
2	.....	.....	84	39	87	54	84	42	86	50	101	.....	83	48	84	46	95	62	85	50	86	49	89	42	81	55	82	48
3	.....	.....	86	36	90	57	88	45	92	50	99	.....	85	45	90	45	94	51	88	50	86	54	86	38	87	63	88	51
4	.....	.....	86	40	86	51	87	48	90	51	98	.....	85	45	86	42	93	61	87	53	83	52	87	41	85	59	85	51
5	.....	.....	84	40	89	54	85	44	88	48	97	.....	83	44	82	40	92	59	79	51	83	50	88	41	81	56	84	49
6	.....	.....	84	35	84	55	85	41	91	48	100	.....	81	42	88	40	92	59	85	36	85	52	90	38	85	58	86	41
7	.....	.....	90	37	81	50	88	51	93	48	102	.....	87	44	89	42	91	56	87	38	86	49	90	37	86	61	88	48
8	.....	.....	89	37	89	52	90	49	90	44	101	.....	85	43	91	39	96	61	86	46	84	48	88	38	87	60	88	50
9	.....	.....	86	33	86	48	88	51	88	49	99	.....	86	42	88	41	93	56	86	55	82	46	95	38	84	61	85	49
10	.....	.....	93	37	88	47	86	45	90	48	98	.....	86	43	86	41	92	59	90	44	87	48	94	36	82	60	90	50
11	.....	.....	95	44	91	50	85	54	89	47	98	.....	84	44	84	40	92	59	84	54	85	44	90	35	82	59	88	47
12	.....	.....	96	36	90	49	85	54	90	44	99	.....	81	42	86	40	92	56	85	40	82	45	85	40	84	61	88	42
13	.....	.....	94	33	90	47	85	51	88	45	98	.....	85	43	84	56	91	56	85	42	82	46	90	35	81	59	87	44
14	.....	.....	94	34	88	44	86	51	88	46	99	.....	80	42	83	39	91	56	81	40	77	47	95	35	82	59	84	44
15	.....	.....	88	34	91	48	87	44	88	45	101	.....	83	41	85	38	91	54	83	34	85	46	95	34	84	58	85	43
16	.....	.....	94	35	89	43	90	46	92	46	104	.....	89	43	89	39	95	58	93	33	90	45	94	35	87	61	92	42
17	.....	.....	94	39	92	45	91	57	93	51	105	.....	87	43	92	39	98	57	87	44	88	51	95	45	89	67	92	42
18	.....	.....	93	36	90	46	92	57	93	46	105	.....	86	43	92	40	100	59	87	39	88	47	97	40	90	64	92	41
19	.....	.....	92	35	87	47	93	57	93	46	104	.....	89	41	94	39	102	56	87	36	84	52	95	35	92	65	88	41
20	.....	.....	88	32	93	52	92	46	85	43	103	.....	83	38	91	40	99	52	88	33	85	42	90	38	88	60	82	40
21	.....	.....	86	32	87	46	85	41	89	42	102	.....	84	54	90	40	93	54	87	35	85	45	95	35	85	57	84	45
22	.....	.....	84	33	87	45	85	44	89	44	98	.....	84	41	86	35	91	56	90	34	86	46	90	34	82	60	86	48
23	.....	.....	85	33	84	46	84	43	90	47	100	.....	88	42	86	37	89	51	90	35	87	50	90	35	83	59	88	42
24	.....	.....	82	40	82	44	81	40	88	49	100	.....	87	55	85	40	91	56	89	45	88	50	92	37	84	62	83	50
25	.....	.....	85	30	85	41	86	44	92	47	101	.....	87	45	-	42	93	54	90	35	91	50	95	35	84	62	88	40
26	.....	.....	87	35	87	45	86	45	92	50	99	.....	87	45	87	37	94	57	91	41	90	52	88	34	84	61	89	41
27	.....	.....	86	33	87	47	85	55	96	49	98	.....	88	46	87	42	94	54	91	37	88	52	90	32	84	61	90	50
28	.....	.....	88	39	85	46	87	53	93	58	99	.....	89	48	85	40	92	58	92	38	90	54	90	35	82	60	92	52
29	.....	.....	91	43	88	46	91	50	94	54	100	.....	90	50	88	40	94	53	95	52	93	52	95	38	81	58	92	45
30	.....	.....	91	38	80	42	90	54	95	54	102	.....	89	51	88	45	95	52	98	47	92	54	98	35	85	62	93	48
31	.....	.....	92	50	82	47	90	57	94	51	104	.....	87	44	90	40	96	53	91	45	87	52	88	38	85	64	92	49
Mns..	.....	.....	88.8	36.6	87.1	47.9	87.3	48.6	90.7	48.0	100.5	.....	85.6	44.6	87.5	40.8	93.8	56.3	87.9	42.4	86.1	49.1	91.4	37.3	84.6	60.4	87.7	45.8

[a], [b], [c], etc., indicate respectively, 1, 2, 3, etc., days missing from the record.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT NO. 11, CALIFORNIA.

Prof. ALEXANDER G. MCADIE, District Editor.

GENERAL SUMMARY.

August was both cool and dry. Regarding temperature, it may be said that the present month was one in which the usual high afternoon temperatures did not occur. The cause is not apparent, but is probably connected with some general condition affecting the whole Pacific slope. There was considerable cloudiness and less sunshine than usual. The month is normally one of little rain and much sunshine. This month there was less rain than in any month since records have been kept. August, 1910, was a dry August, but August, 1911, surpassed it in this respect. Last year 87 per cent of the stations reported no rain during the month; while this year 96 per cent of the stations made the same report.

Notwithstanding the dryness, the month was on the whole a pleasant one. There was a good supply of water, and visitors and tourists were able to get into the mountains and view waterfalls running full, which usually at this time of year show a marked decrease in the volume of water moving. The present month was in marked contrast with the same month last year. Then the early stoppage of the rains and the limited water supply caused lower stages in the rivers and drier watercourses than had been known for many years. Last year the waterfalls ran dry at an early date and roads were unusually dusty. Snow was found only at elevations of 12,000 feet or above, whereas this year snow was in sight at elevations of 10,000 feet.

The weather was favorable from an agricultural standpoint and fruit ripened nicely, though somewhat late. It is reported by certain orchardists that there is less sugar in the fruit than in other years.

The month was a quiet month and there were few storms. The usual summer depression existed over the valley of the Colorado, and from August 22 to August 26 conditions were favorable for afternoon thunderstorms in the southeastern portion of the State. There were, however, no well-marked Sonora storms. On the other hand, none of the northern lows came south.

TEMPERATURE.

The mean temperature for the State was 2° below the normal. The following table gives the mean temperature for California during the time for which such records have been kept:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	°F.	°F.		°F.	°F.
1897	73.9	+1.8	1905	73.4	+1.3
1898	74.5	+2.4	1906	73.6	+1.5
1899	70.8	−1.3	1907	71.0	−1.1
1900	71.0	−1.1	1908	73.3	+1.2
1901	75.6	+3.5	1909	72.1	0.0
1902	71.8	−1.3	1910	72.5	+0.4
1903	72.6	+0.5	1911	70.1	−2.0
1904	73.9	+1.8			

The highest mean temperature was 96.6° at Bagdad, and nearly all the stations in the Colorado Desert had mean temperatures for the month exceeding 90°. The lowest mean temperature was 52.4° at Point Reyes Light. Many of the stations along the immediate coast had mean temperatures approximating 55°. This shows the controlling influence of the ocean. The mean temperature at Eureka was 55.8°; at San Francisco, 56.6°; at Monterey, 58.6°; at Point Lobos, 55°; and at the Southeast Farallon, which perhaps is the most significant value of all, inasmuch as the station is practically a rock in the sea, 53.8°. It is interesting to note that the mean temperature of Tamarack, elevation 8,000 feet, was 54°, or practically the same as the ocean.

The highest temperature of the month was 114°, and occurred at Mammoth Tank on the 19th and also at Heber and Indio on the 30th. Last year the highest temperature was 120°. It may be noted in passing that temperatures as high as 130° have been recorded in the Salton Desert section during the month of August.

The lowest temperature was 28°, and occurred at Sierraville on the 15th. This is 8° higher than the lowest temperature recorded during August, 1910.

PRECIPITATION.

The average monthly precipitation for California for August is as follows:

Years.	Mean.	Departure.	Years.	Mean.	Departure.
	Inch.	Inch.		Inch.	Inch.
1897	0.03	−0.04	1905	0.03	−0.04
1898	.02	− .05	1906	.13	+ .06
1899	.11	+ .04	1907	.11	+ .04
1900	.02	− .05	1908	.12	+ .05
1901	.12	+ .05	1909	.19	+ .12
1902	.06	− .01	1910	.01	− .06
1903	.02	− .05	1911	.00	− .07
1904	.17	+ .10			

The month, as stated above, will go into history as the driest on record. The greatest monthly rainfall was 0.08 of an inch at Eureka. This year there was practically no rain in the southeastern portion of the State, whereas last year there were some heavy showers. The heaviest 24-hour rainfall was 0.05 of an inch at Eureka.

SUNSHINE.

The following table gives the total hours of sunshine and percentages of the possible:

Stations.	Hours.	Per cent of possible.	Stations.	Hours.	Per cent of possible.
Eureka	142	33	Sacramento	382	90
Fresno	419	100	San Diego	322	78
Los Angeles	343	83	San Francisco	300	68
Mount Tamalpais	408	97	San Jose	340	81
Red Bluff	422	99	San Luis Obispo	327	78

There was less sunshine this August than in August, 1910, the difference being greatest at the coast stations.

LOCAL STORMS.

Thunderstorms occurred at Campo on the 18th, at Eastpark on the 3d, and at Tamarack on the 26th and 28th.

NOTES ON THE RIVERS OF THE SACRAMENTO AND SAN JOAQUIN WATERSHEDS FOR AUGUST, 1911.

By N. R. TAYLOR, Local Forecaster.

Sacramento watershed.—The Sacramento River fell steadily but slowly during the month, and its average stage showed little departure from that usually maintained in August. It was, however, about 1 foot higher than during the corresponding month of 1910. The following average stages from the more important points in this stream are quoted: Kennett, 0.4 foot; Red Bluff, 1.3 feet; Colusa, 1.9 feet; Knights Landing, 1 foot; and Sacramento city, 6.8 feet.

The American River fell slowly, with only 1 foot between the highest and lowest stages. It averaged, at Folsom, 2.5 feet, which is the highest for any August since that of 1907.

The rivers of the Feather-Yuba territory, while considerably higher than during the preceding August, were practically normal. At Marysville the Yuba averaged 7.7 feet, which is 1.6 feet higher than the average of August of 1910. The Feather, at Oroville, averaged 1.5 feet, which is 0.7 foot above that of the preceding August.

San Joaquin watershed.—All streams in the drainage basin of the San Joaquin Valley carried more water than for any August since that of 1907. This was especially so of the San Joaquin River itself below the mouth of the Merced. At Lathrop the river maintained a stage of over 10 feet until the middle of the second decade, and the range at this point, between 13.8 feet on the 1st and 2.3 feet on the 31st, is the greatest that has ever occurred in any summer month since records have been kept. The average stage at San Joaquin bridge, near Lathrop, was 7 feet, which is 6 feet above that of the corresponding month in 1910.

Beginning with about October 1 a new river gage will be established on the Feather River at Nicolaus, which is 1 mile below the mouth of the Bear River, and about 10 miles above the junction of the Feather and Sacramento Rivers.

REFLECTION OF FOG SIGNALS AT POINT REYES LIGHT, CAL.

By JAMES JONES, Observer, Weather Bureau.

Lying directly across the course of coastwise craft, with its steep cliffs and jagged rocks on the south and a long stretch of sand beach on the north, Point Reyes is one of the most dangerous points on the Pacific coast of the United States. It is shrouded in dense fog 111 days out of the year, average for 18 years, and during the months of July and August fog prevails more than half the time. The average number of foggy days for August, the foggiest month, is 19.

During the year ending July 1, 1911, fog was the cause of the American schooner *Annie E. Smale* and the American steamship *Tallac* going ashore on Point Reyes, and of a disastrous collision between the American steamship *Beaver* and the Norwegian steamship *Selja*, in which the latter was sunk off the same point. Three lives were lost in these accidents, in addition to property worth nearly $1,000,000. From the evidence at hand it seems that in all of these cases the accidents were due either to inaudibility of fog signals or to inability to properly locate the signals when heard.

In a comprehensive article on "Fog," in the Climatology of California, Prof. McAdie points out the importance of any increase in our knowledge of the dispersion and aberration of fog signals, and the accidents previously referred to accentuate the need of experimental work in this direction. If such work has been delayed through underestimation of the extent of variations in audibility due to stratification of the atmosphere, the following description of effects noted here may serve as an incentive to further study of the subject.

On September 1, 1910, the fog signal at Point Reyes was changed from a steam whistle to a compressed air siren, the amplifying horn of which is placed so as to project the sound out over the ocean where there is a free expanse of water with no land or rocks whatever to interfere with the sound waves. Yet, since the installation of the siren, it is not uncommon for a loud, clear echo to be thrown back, from a fraction of a second to eight seconds after the siren sounds; showing that there is a very effective reflecting surface distant from a few feet up to about 4,400 feet from the siren.

The fact that a sharply defined boundary surface between two air columns of different temperatures will reflect and refract sound waves is well known. Now, if the echo in question is due to reflection from such a surface it would indicate the proximity of a mass of air the temperature of which differs from that in which the fog prevails, and it is an observed fact that, so far, in every instance where the echo has been heard the fog has cleared away, at least temporarily, within a short time thereafter, though it may have continued for days before. One of the quickest changes occurred on August 26, 1911. Dense fog came on during the early morning. At 4.38 p. m. the first echo was heard, eight seconds after the blast, which, since the sound must travel out and back again, would locate the reflecting surface at a distance of about 4,400 feet. The signal continued to operate and the echo to be heard until 4.45 p. m., when the fog cleared away in an instant, leaving only a few scattered patches of light fog over the ocean. By 5.20 p. m. the fog had disappeared entirely.

But the main point, which it is the purpose of these notes to emphasize and which should be brought to the attention of mariners, is the effectiveness of these reflecting surfaces in the free air. The echo of the fog signal that comes back from out over the ocean is as clear and sharp as any echo from other surfaces ever noted by the writer. The warning sounds, after suffering such great reflection, must, if heard at all beyond the reflecting surface, be very difficult to detect. Masters of vessels should, therefore, approach with caution dangerous points at which there are fog-signal stations, and Point Reyes in particular. Too much reliance should not be placed in the audibility of the fog signals, for, though heard at a certain distance normally, they may be entirely inaudible even at a much shorter distance under abnormal atmospheric conditions.

FROST RINGS.

By Prof. RALPH E. SMITH.

Through the courtesy of the editor of the Pacific Rural Press, Prof. E. J. Wickson, we are able to furnish the accompanying photograph, showing the effect of spring frosts in California upon fruit, particularly Bartlett pears. So far as known the cause of this particular blemish has not previously been determined. It is called "ring around the pear" and is of quite general occurrence during certain seasons. It is often the cause of considerable

The frost ring on the pear.

loss, as both the quality and selling price are affected. The blemish consists of a scabby ring of surface tissue, sometimes extending uniformly around the pear, or again occurring only on one side or part way around the fruit. The effect somewhat resembles that of pear scab; but it is quite distinct from the latter and is easily distinguished by one familiar with scab. The scab fungus, Fusicladium Pirinum, is never found in connection with the trouble we are describing, although it may occur simultaneously with it.

Observations during the present season have established clearly that this ring around the pear is a frost effect occurring when the fruit is very young. During the past spring immense damage was caused to fruit crops all over the central and northern parts of California by late frosts, and as an aftereffect of this these ringed pears have been quite abundant. The surface tissue of the young fruit is slightly frozen just back of the petals of the flower, and such pears as are not affected severely enough to cause them to fall go on developing until they reach the condition shown in the photograph. The growth of the tissue under the frozen ring is retarded and the developing fruit becomes constricted at this point.

THE WINDS OF THE YOSEMITE VALLEY.[1]

By F. E. MATTHES, U. S. Geological Survey.

To most folks roaming about the Yosemite Valley its winds and breezes seem a matter of small interest or consequence. They come and go, now one way, now another, apparently without regularity or system—moody, capricious beyond analysis. In the midst of the grand tumult of the Yosemite landscape, our senses fairly bewildered with its many glories, we can not stop to consider these little breaths that blow about us, and let them puff by unheeded. The Yosemite region is not a windy country anyway; but once or twice in a season does a gale arise to disturb its wonted tranquillity, and its daily zephyrs are such light, airy little nothings as to scarcely seem worthy of downright study. And yet they become singularly interesting when once rightly understood. They turn out to be surprisingly systematic and withal so intimately connected with the configuration of the valley itself, that, to one who has at length mastered their secret they grow to be one of its immanent features, as characteristic and inseparable as El Capitan or the Yosemite Falls.

It happens to be so ordained in nature that the sun shall heat the ground more rapidly than the air. And so it comes that every slope or hillside basking in the morning sun soon becomes itself a source of heat. It gradually warms the air immediately over it, and the latter, becoming lighter, begins to rise. But not vertically upward, for above it is still the cool air pressing down. Up along the warm slope it ascends, much as shown by the arrows in the accompanying diagram. (Fig. 1.) Few visitors to the valley but will remember toiling up some never-ending zigzags on a hot and breathless day, with the sun on their backs and their own dust floating upward with them in an exasperating, choking cloud. Perhaps they thought it was simply their misfortune that the dust should happen to rise on that particular day. It always does on a sun-warmed slope.

But, again, memories may arise of another occasion when, on coming down a certain trail, the dust ever de-

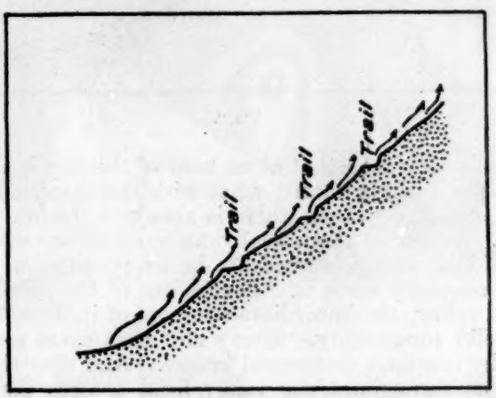


FIG. 1.

scended with the travelers, wafting down upon them from zigzag to zigzag as if with malicious pleasure. That, however, undoubtedly happened on the shady side of the valley, for there the conditions are exactly reversed. When the sun leaves a slope the latter begins at once to lose its heat by radiation, and in a short time is colder than the air. The layer next to the ground then gradually chills by contact, and, becoming heavier as it condenses, begins to creep down along the slope. (See fig. 2.) There is thus normally a warm updraft on a sunlit slope and a cold downdraft on a shaded slope—and that rule

[1] Reprinted from the Sierra Club Bulletin, Vol. VIII, No. 2, June, 1911.

one may depend on almost any day in a windless region like the Yosemite. Indeed, one might readily take advantage of it and plan his trips so as to always have a dust-free journey. One might time his ascent for an hour when the route lies wholly in shadow; the dust will then obligingly pour over the edge of the trail, perhaps upon others following on a lower zigzag, but that, of course, is their lookout. Conversely one might time the descent for an hour when the trail is wholly in the sun; the dust will then float up behind one, leaving ever a clear path ahead. The writer, in fact, did deliberately put this in practice on more than one occasion during his sojourn in the valley, whenever the choice of hour mattered little otherwise—always with the desired result. Thus, he would be careful to make the ascent of the short trail to Glacier Point before its zigzags emerged from the morning shadows, and to descend again before the sun had set on them. But the casual tourist is seldom favored in this way. His sight-seeing trips are laid out for him with little regard for any rules like these, and as a consequence he eats Yosemite dust a good share of the time.

But, it may be objected, the valley sides lie ever part in sun, part in shadow. The very lay and configuration of

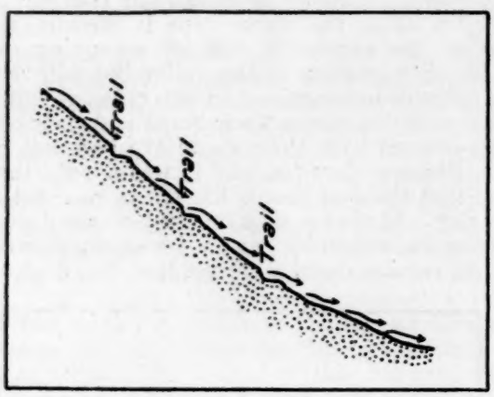


FIG. 2.

the valley are such that at no hour of the day is either of its slopes entirely sunlit; what with the many cliffs and headlands and recesses there is always a shadow here or there. Is there, then, really an updraft wherever the sun shines and a downdraft in every shadow patch? Most assuredly there is. That is one of the peculiarities of the valley, the immediate outcome of its exceptionally bold cliff topography. Every cliff that casts a shadow thereby creates a downward breeze. And thus there are in spots throughout the valley local breezes that recur daily at certain hours as the shadows come and go. One may readily test this to his satisfaction on a place like Glacier Point. In the morning, when the great cliff is still in shadow, a bit of paper tossed over the brink at once disappears, sucked down by a descending current, but at noon, when the sun beats on the cliff, the very opposite will happen; instead of sailing down, the paper shoots upward, and continuing upward disappears like a tiny white speck in the blue.

But let it not be thought that there are none but local air currents in the valley. There is also a great general movement, itself the resultant of all the lesser ones. How it is brought about is not difficult to explain. As the afternoon wears on and the lengthening shadows advance over the landscape the downward breezes progressively gain in force, exting ishing one after another the upward currents, until at last with the lowering of the sun they become general over the entire surface of the cooling land. Sliding down from every slope and cliff, they join in the bottom of the valley, there to form a broad air stream or river that flows on toward the plains below. Every side valley or canyon, moreover, sends its reenforcements, for in every one of them the same thing is happening; and thus with nightfall there is organized a great system of confluent air streams corresponding closely to the valley system of the land.

All night long this down-valley movement continues, until at length the morning brings the warming sun again. Then, as summit after summit and slope after slope is heated—insolated is the technical term—the warm updrafts are revived again. At first feeble and in spots only, they soon wax stronger and more general, and, as the shadows retreat and dwindle before the oncoming light invasion, they finally gain the upper hand. The nocturnal air streams cease to flow and a general movement is inaugurated in the opposite direction up toward the highlands at the valley head. It is not usually so noticeable as the night wind, for its tendency is naturally to spread and diffuse upward, while the nocturnal movement is one of condensation and concentration, especially vigorous along the valley floor. But it is none the less a well-defined, characteristic movement that continues throughout the day. Late in the afternoon with the growing of the shadows it gradually comes to a stop and the tide turns back again. Thus the air of the Yosemite Valley goes through a daily ebb and flood, reversing early every morning and again late in the afternoon.

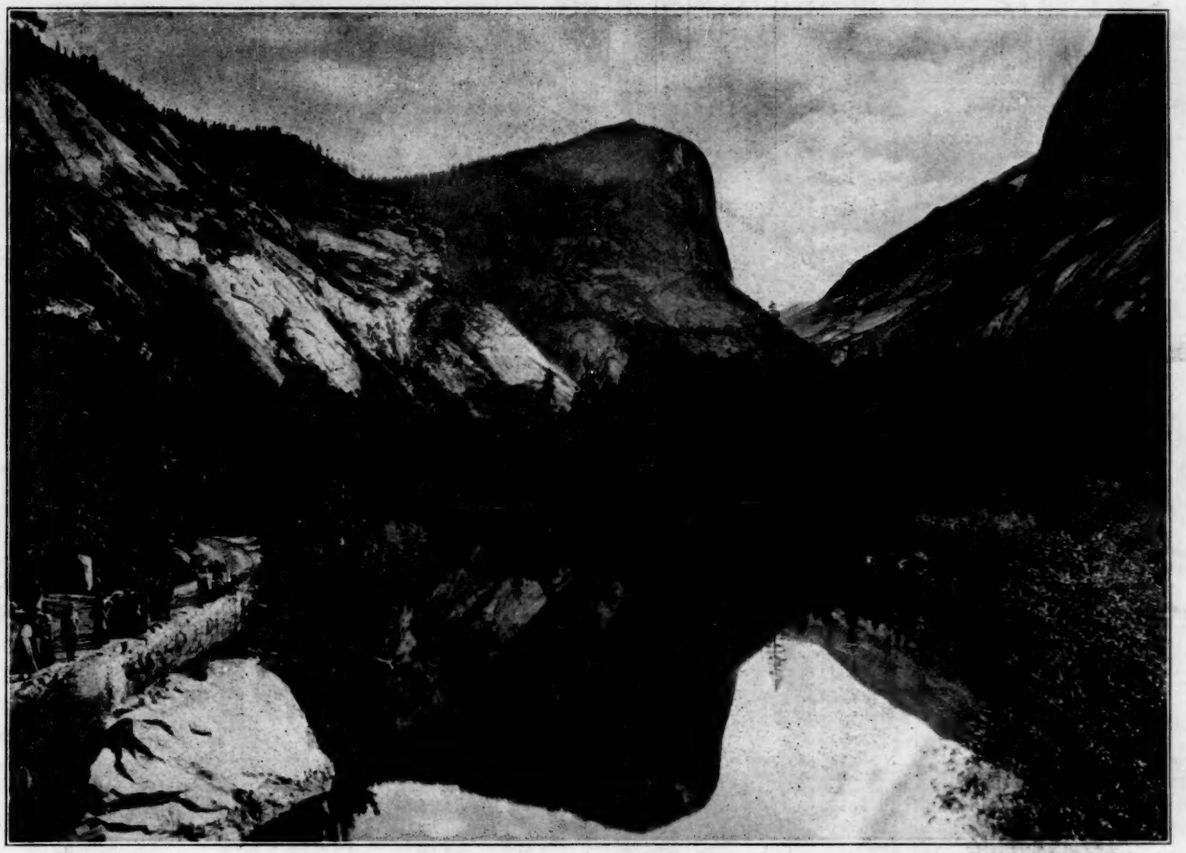
Most mountain valleys have similar alternating night and day winds, but those of the Yosemite Valley are exceptionally pronounced. All conditions in its case favor the orderly consummation of the process and conspire to accentuate each phase. No general winds sweep over the country to interfere with the local up or down drafts, except at intervals of many weeks; and so exceedingly dry and pure is the atmosphere of the Sierra, so few particles of dust or moisture does it hold, that the sun's rays plunge through it almost without let or hindrance. Insolation, consequently, is particularly intense and begins almost immediately with the rising of the sun, while radiation is equally rapid and sets in promptly the moment the sun disappears. And thus it comes that the reversals in the Yosemite Valley take place with clocklike regularity, and the entire movement assumes the rhythmic swing of a pendulum. Nothing was better calculated to make this visible to the eye than the smoke column from the forest fires that raged persistently at the lower end of the valley during the summer of 1905. Every morning the valley was clear, having been swept out, so to speak, by the nocturnal down-valley current, and the smoke pall could be seen floating off to the southwest, low down on the Sierra flank. But with the rising of the warm day breezes the smoke would gradually advance up the valley, becoming denser by degrees, until by 9 or 10 o'clock one could scarcely see across from rim to rim. This condition would prevail all day until with the afternoon reversal the down-valley wind would set in again and take the smoke back with it. Much to the chagrin of the writer, who at the time was engaged in the survey of the valley and depended on the clearness of the air for his long-distance sights, this daily smoke invasion persisted for four long months with scarcely an interruption.

It may be imagined that he came to understand the phenomenon right well.

Oddly enough it is precisely upon this daily atmospheric seesaw that one of the Yosemite's chief attractions depends. As is well known, one must go to Mirror Lake at an early morning hour if he wishes to see it at its best. The surprised and usually somewhat vexed tourist who finds he must arise at an impossible hour in order to enjoy a perfect reflection, little dreams that what he is undertaking really amounts to keeping a tryst with the early morning reversal out on the shores of Mirror Lake; and that, unless he be quite punctual he will miss it because of its almost momentary briefness. Yet such is actually the case. The stillness of the water surface sets in just as the down-valley draft dies out; but as soon as the upper cliffs of Tenaya Canyon become sufficiently insolated, updrafts begin to stir the air again and a faint tremor forthwith steals over the lake. Accepting the correctness of this explanation, one is tempted to believe there might be another calm corresponding to the afternoon reversal—an ever so much more convenient hour for the tourist. But, alas, experience has shown that this can not always be depended on. The reason is, no doubt, that in the afternoon there is no well-defined pause in the circulation of the air of the Tenaya Canyon, because of the presence of great shadows on its north side which send down eddying breezes at various times.

This discussion of the winds of the Yosemite Valley would scarcely be complete without a word about the breezes that play near the great waterfalls. Each of these, it will be remembered, leaps from the mouth of an elevated hanging valley. At night, when the down-valley currents are organized, the stream issuing from each of these valleys plunges down over the cliff very much like a waterfall. Few people probably are aware of the existence of these—shall we call them "air falls?" Nevertheless, they are by no means imaginary, as one may readily find out by ascending either the Yosemite Falls trail or the Nevada Falls trail in the evening. The writer had occasion to do so many times when returning to his high-level camps above the valley, and the unpleasant memory of the chilling downdrafts that poured upon him on these evening trips is with him yet. During the daytime, on the other hand, the air rises vertically along the cliffs and up into the hanging valleys, taking part of the spray from the falls along with it. A pretty example of this may be seen at the Bridal Veil Falls, where two little combs of spray, one on each side of the stream, steadily curve upward over the brink. As soon as the sun is off the cliff, however, they at once cease to exist.

Many other features about the valley that find their explanation in the wind system here outlined might be added, but the foregoing will suffice to direct attention to them.



MIRROR LAKE, YOSEMITE VALLEY.

Photograph by Pillsbury Picture Co.

TABLE 1.—*Climatological data for August, 1911. District No. 11, California.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
Oregon.																			
Klamath Agency	Klamath	4,169	3	55.4	.....	91	29	24	25	66	0	.....	0	0	0	29	2	0	nw.	Edson C. Watson.
Klamath Falls	....do	4,100	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. H. Heileman.
Lakeview	Lake	4,825	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bert Rice.
Merrill	Klamath	4,070	5	61.0	.....	89	28	34	18	47	0	.....	0	0	0	29	1	0	.....	Mrs. Agnes Ritchson.
Yonna	....do	4,146	4	59.4	.....	92	30	29	16	51	0	.....	0	0	0	20	11	0	w.	Jacob Ruecke.
California.																				
Alameda	Alameda	.....	1	62.6	.....	83	20	52	8†	30	0.00	.....	0.00	0	0	4	27	0	nw.	Chas. E. Sears.
Alturas	Modoc	4,460	7	63.0	.....	96	30	30	16	61	0.00	.....	0.00	0	0	31	0	0	sw.	Prof. C. B. Towle.
Angiola	Tulare	208	11	76.2	− 1.2	107	1	48	18	53	0.00	0.00	0.00	0	0	31	0	0	w.	Santa Fe Co.
Antioch **	Contra Costa	46	32	82.0	+ 7.5	97	11	61	29	....	0.00	− 0.01	0.00	0	0	31	0	0	e.	Southern Pacific Co.
Aptos **	Santa Cruz	102	26	61.4	0.0	80	20	51	16	....	0.00	− 0.05	0.00	0	0	27	0	4	nw.	Do.
Arrowhead Springs	San Bernardino	2,000	2	79.7	.....	102	31	49	27	34	0.00	.....	0.00	0	0	.....	.....	.....	.....	Dr. E. Soegaard.
Auburn	Placer	1,360	40	72.4	− 3.5	98	1†	45	4	49	0.00	− 0.02	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Avalon	Los Angeles	.....	1	65.6	.....	78	20	57	9†	15	0.00	.....	0.00	0	0	31	0	0	w.	T. S. Manning.
Azusa	....do	540	9	75.4	.....	107	31	47	13	55	0.00	− 0.09	0.00	0	0	31	0	0	sw.	A. P. Griffith.
Bagdad	San Bernardino	784	8	96.6	.....	112	19	80	27†	25	0.00	.....	0.00	0	0	31	0	0	.....	Santa Fe Co.
Bakersfield	Kern	404	22	76.4	− 8.3	99	1	54	28	35	0.00	− 0.01	0.00	0	0	31	0	0	.....	Do.
Barstow	San Bernardino	2,105	8	84.6	.....	112	18	53	11	50	0.00	− 0.12	0.00	0	0	31	0	0	n.	E. L. White.
Berkeley	Alameda	317	24	59.0	− 1.9	79	15†	50	15	27	0.00	− 0.07	0.00	0	0	6	15	10	sw.	State University.
Biggs **	Butte	98	12	71.4	− 2.6	93	21	58	5†	....	0.00	− 0.02	0.00	0	0	31	0	0	s.	Southern Pacific Co.
Bishop	Inyo	4,450	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. A. Chalfant.
Bishop Creek	....do	8,500	1	59.0	.....	78	19	36	12	37	0.00	.....	0.00	0	0	.....	.....	.....	.....	Paul E. Lodge.
Blocksburg	Humboldt	1,700	5	65.8	.....	95	24	41	15†	49	0.00	.....	0.00	0	0	30	0	1	nw.	Victor Hope.
Blue Canon	Placer	4,695	12	64.7	+ 2.0	88	24	41	20	37	0.00	− 0.16	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Blythe	Riverside	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ray W. Ward.
Branscomb	Mendocino	2,000	11	63.8	.....	93	24	36	11†	43	0.00	− 0.02	0.00	0	0	29	2	0	n.	A. J. Haun.
Brawley	Imperial	− 105	2	91.0[a]	.....	111	19	65	8†	41	0.00	.....	0.00	0	0	.....	.....	.....	.....	M. D. Witter.
Brush Creek	Butte	2,140	7	71.4	.....	100	22	42	20†	54	0.00	.....	0.00	0	0	31	0	0	s.	Cal. Gas & Elec. Co.
Burney	Shasta	3,300	1	61.4	.....	90	24†	32	16	51	0.00	.....	0.00	0	0	29	2	0	sw.	Mrs. M. D. Chambers.
Calexico	Imperial	0	6	90.8	.....	112	30	65	4	41	0.00	.....	0.00	0	0	24	7	0	se.	J. E. Peck.
Caliente **	Kern	1,290	35	88.5	+ 5.4	104	3†	70	5	....	0.00	− 0.01	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Calistoga **	Napa	363	39	71.2	+ 0.9	100	2†	50	31	....	0.00	− 0.01	0.00	0	0	31	0	0	.....	Do.
Campbell	Santa Clara	217	14	61.6	− 2.5	88	20	39	16	47	0.00	− 0.04	0.00	0	0	31	0	0	nw.	F. M. Righter.
Camptonville (near)	Yuba	3,500	4	74.4	.....	100	2	48	15	46	0.00	.....	0.00	0	0	31	0	0	.....	Cal. Gas & Elec. Co.
Cedarville	Modoc	4,675	17	67.4	− 0.5	89	27	43	10	43	0.00	− 0.26	0.00	0	0	30	1	0	sw.	T. H. Johnstone.
Chico	Butte	189	41	74.8	− 6.7	102	1	50	8†	46	0.00	− 0.03	0.00	0	0	31	0	0	s.	G. H. Stephenson.
China Flat	Humboldt	600	2	72.8	.....	104	25	45	16	52	0.00	.....	0.00	0	0	30	1	0	s.	O. I. Westerburg.
Chino **	San Bernardino	714	19	84.4	+ 9.2	105	17	68	12	....	0.00	0.00	0.00	0	0	30	0	1	e.	Southern Pacific Co.
Cisco **	Placer	5,939	40	61.0	− 0.8	84	1	42	11†	....	0.00	− 0.02	0.00	0	0	31	0	0	.....	Do.
Claremont	Los Angeles	1,200	19	74.6	+ 4.0	107	31	49	7†	44	T.	− 0.05	T.	0	0	21	9	1	w.	F. P. Brackett.
Cloverdale	Sonoma	340	8	69.3	.....	97	21	41	12	59	0.00	.....	0.00	0	0	31	0	0	s.	John O. Ogle.
Colfax	Placer	2,421	40	69.7	− 6.8	91	1	49	15	32	0.00	− 0.02	0.00	0	0	31	0	0	n.	Southern Pacific Co.
Colusa	Colusa	60	8	70.8	.....	94	24	50	10†	40	0.00	0.00	0.00	0	0	31	0	0	s.	C. D. McCormish.
Corning **	Tehama	277	25	84.3	+ 3.2	101	24	66	28	....	0.00	− 0.03	0.00	0	0	26	5	0	s.	Southern Pacific Co.
Cuyamaca	San Diego	4,677	12	71.0	+ 6.5	91	17†	48	26	34	T.	− 0.07	T.	0	0	19	11	1	e.	L. L. Macquarie.
Daunt	Tulare	4,000	4	69.1	.....	91	18†	49	11	41	0.00	.....	0.00	0	0	31	0	0	.....	D. L. Wishon.
Davisville	Yolo	51	39	68.2	− 5.9	99	30	37	16†	58	0.00	− 0.01	0.00	0	0	31	0	0	sw.	S. H. Beckett.
Deer Creek	Nevada	3,700	4	61.4	.....	88	22†	34	20	52	0.00	.....	0.00	0	0	31	0	0	w.	Cal. Gas & Elec. Co.
Del Monte	Monterey	.....	.....	61.7	.....	72	21†	48	16	20	0.00	.....	0.00	0	0	25	0	6	n.	H. R. Warner.
Delta	Shasta	1,138	26	71.5	− 4.8	99	24†	48	3†	47	0.00	− 0.01	0.00	0	0	31	0	0	s.	Southern Pacific Co.
Dennir	Stanislaus	126	11	71.2	− 5.2	97	1†	47	11	48	0.00	0.00	0.00	0	0	31	0	0	.....	Santa Fe Co.
Dobbins	Yuba	1,650	7	74.6	.....	98	30	54	12†	38	0.00	.....	0.00	0	0	28	3	0	s.	Cal. Gas & Elec. Co.
Dudleys	Mariposa	3,000	2	63.5	.....	93	31	38	21	50	0.00	.....	0.00	0	0	30	1	0	nw.	W. H. Dudley.
Dunnigan **	Yolo	65	34	83.6	+ 3.9	100	1†	58	11	....	0.00	− 0.02	0.00	0	0	30	0	1	s.	Southern Pacific Co.
Dunsmuir **	Siskiyou	2,285	22	65.8	− 1.1	99	1	47	12	....	0.00	− 0.10	0.00	0	0	31	0	0	n.	Do.
Durham	Butte	160	16	73.4	− 2.3	99	24†	47	16†	47	0.00	− 0.03	0.00	0	0	30	1	0	s.	R. W. Durham.
El Cajon	San Diego	482	12	73.2	+ 2.2	103	30	49	16	52	0.00	− 0.11	0.00	0	0	31	0	0	sw.	H. H. Kessler.
Electra	Amador	725	7	74.5	.....	102	2†	48	15†	50	0.00	.....	0.00	0	0	31	0	0	.....	Cal. Gas & Elec. Co.
Elsinore	Riverside	1,234	16	75.4	− 1.7	111	31	43	22	59	0.00	− 0.05	0.00	0	0	29	1	1	w.	A. F. Schult.
Emigrant Gap	Placer	5,230	37	67.6	+ 1.7	86	1†	49	12†	32	0.00	− 0.04	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Escondido	San Diego	657	17	72.8	+ 0.7	103	31	46	13†	51	0.00	0.00	0.00	0	0	18	13	0	w.	A. R. Moon.
Eureka	Humboldt	64	25	55.8	0.0	65	19	48	16	16	0.08	− 0.06	0.05	0	4	0	19	12	n.	U. S. Weather Bureau.
Farmington **	San Joaquin	111	32	77.0	+ 0.8	96	21†	55	27	....	0.00	0.00	0.00	0	0	31	0	0	nw.	Southern Pacific Co.
Folsom	Sacramento	252	39	72.8	− 6.6	98	31	50	10	43	0.00	− 0.03	0.00	0	0	31	0	0	s.	F. O. Hutton.
Fordyce Dam	Nevada	6,500	16	57.0	.....	79	29	38	5†	36	0.00	− 0.38	0.00	0	0	31	0	0	sw.	E. E. Roening.
Fouts Springs	Colusa	1,650	7	69.6	.....	99	6	42	15	45	0.00	.....	0.00	0	0	.....	.....	.....	.....	A. J. Burgi.
Fresno	Fresno	293	24	77.2	− 4.0	104	31	55	5	42	0.00	0.00	0.00	0	0	31	0	0	w.	U. S. Weather Bureau.
Fruto **	Glenn	624	22	77.2	− 3.4	100	24	58	15	....	0.00	− 0.05	0.00	0	0	31	0	0	s.	Southern Pacific Co.
Galt **	Sacramento	49	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Do.
Georgetown	El Dorado	2,650	38	72.7	− 5.2	95	24	52	8†	36	0.00	− 0.02	0.00	0	0	31	0	0	sw.	H. D. Jerrett.
Gilroy **	Santa Clara	193	37	64.9	− 3.0	95	20†	50	6†	....	0.00	− 0.04	0.00	0	0	31	0	0	se.	Southern Pacific Co.
Gilta	Siskiyou	3,300	1	65.9	.....	93	30	38	15	39	0.00	.....	0.00	0	0	31	0	0	e.	A. Dannenbrink.
Glennville	Kern	5,500	1	63.8	.....	83	21	48	13	33	0.00	.....	0.00	0	0	30	1	0	.....	C. H. Likely.
Gold Run	Placer	3,222	12	73.6	+ 1.0	93	1	55	12†	30	0.00	− 0.02	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Gonzales **	Monterey	127	12	71.7	+10.4	94	8	52	3†	....	0.00	0.00	0.00	0	0	31	0	0	nw.	Do.
Grass Valley	Nevada	2,690	39	70.2	.....	91	30	50	11†	35	0.00	− 0.02	0.00	0	0	31	0	0	sw.	F. R. Hull.
Greenville	Plumas	3,600	17	59.7	− 3.8	95	29	31	18†	58	0.00	− 0.30	0.00	0	0	31	0	0	sw.	C. H. Higbie.
Groveland	Tuolumne	2,828	2	69.0	.....	93	31	48	17	39	0.00	.....	0.00	0	0	30	1	0	.....	H. S. Richardson.
Guinda **	Yolo	350	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Hanford	Kings	249	11	70.9	− 6.6	94	30	48	16	44	0.00	0.00	0.00	0	0	29	2	0	.....	Santa Fe Co.
Healdsburg	Sonoma	110	18	66.9	+ 2.1	99	20	42	13	50	0.00	− 0.02	0.00	0	0	8	23	0	s.	F. J. Kinley.
Hearst	Mendocino	1,800	1	69.4	.....	96	1†	44	5†	51	0.00	.....	0.00	0	0	30	1	0	sw.	H. D. Ellmaker.
Heber	Imperial	−20	5	90.0	.....	114	30	63	4	45	0.05	.....	0.05	0	1	23	8	0	se.	C. J. Booth.
Hetch Hetchy	Tuolumne	3,665	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. W. Brown.
Hollister	San Benito	284	37	61.6	− 5.1	94	20†	42	17	50	0.00	− 0.04	0.00	0	0	30	1	0	w.	J. N. Thompson.
Hornbrook **	Siskiyou	2,154	23	65.0	−10.3	86	2†	48	15	....	0.00	− 0.14	0.00	0	0	30	0	1	.....	Southern Pacific Co.
Hot Springs	Tulare	3,300	4	71.6	.....	91	1†	52	13	32	0.00	.....	0.00	0	0	31	0	0	.....	U. S. Forest Service.
Hullville (near)	Lake	2,250	4	68.5	.....	95	24	40	15	47	0.00	.....	0.00	0	0	12	19	0	sw.	T. H. Betterton.
Idyllwild	Riverside	5,250	10	68.4	+ 1.1	91	24†	36	25	51	0.00	− 1.33	0.00	0	0	29	2	0	sw.	Earl Powers.
Independence	Inyo	3,907	15	74.6	− 1.8	100	18	50	13	47	0.00	− 0.22	0.00	0	0	31	0	0	nw.	U. S. Weather Bureau.
Indio	Riverside	−20	33	91.2	− 1.8	114	30	65	27	38	0.00	− 0.14	0.00	0	0	29	2	0	nw.	F. N. Johnson.
Inskip	Butte	4,975	4	66.4	.....	86	24	46	15	32	0.00	.....	0.00	0	0	25	6	0	.....	Cal. Gas & Elec. Co.
Ione **	Amador	287	33	74.8	− 3.3	96	21†	56	16†	....	0.00	0.00	0.00	0	0	30	0	1	nw.	Southern Pacific Co.

TABLE 1.—*Climatological data for August, 1911. District No. 11*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California—Continued.																			
Jamestown	Tuolumne	1,471	8	72.0	.....	96	1†	48	14†	42	0.00	.....	0.00	0	0	31	0	0	.....	Sierra Railway Co.
King City	Monterey	333	24	66.2	− 0.2	100	30	35	27	60	0.00	0.00	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Lake Eleanor	Tuolumne	4,700	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	O. J. Todd.
La Porte	Plumas	5,000	17	60.4	+ 0.6	85	24	38	20	40	0.00	− 0.22	0.00	0	0	31	0	0	n.	Chas. W. Hendel.
Le Grand	Merced	255	11	73.3	− 2.9	101	21†	47	17	52	0.00	0.00	0.00	0	0	31	0	0	.....	Santa Fe Co.
Lemon Cove	Tulare	600	16	79.4	− 0.5	105	28	52	25	49	0.00	0.00	0.00	0	0	31	0	0	sw.	G. W. Sandidge.
Lick Observatory	Santa Clara	4,209	22	66.9	− 2.2	83	30	51	21	28	0.00	− 0.03	0.00	0	0	31	0	0	nw.	The Director.
Livermore	Alameda	485	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. G. Still.
Lodi	San Joaquin	45	29	67.6	− 5.4	92	21†	45	15†	42	0.00	− 0.05	0.00	0	0	31	0	0	w.	Ezra Fiske.
Lone Pine	Inyo	2,728	6	72.2	.....	99	1†	49	10†	46	0.00	.....	0.00	0	0	31	0	0	s.	G. F. Marsh.
Long Valley	Lassen	4,400	2	68.2	.....	92	30	38	20	48	0.00	.....	0.00	0	0	22	7	2	sw.	A. G. Evans.
Los Angeles	Los Angeles	293	34	70.6	+ 2.0	95	18	55	12	32	0.00	− 0.03	0.00	0	0	22	8	1	sw.	U. S. Weather Bureau.
Los Banos **	Merced	121	24	73.3	− 6.0	96	1	56	26	....	0.00	0.00	0.00	0	0	30	0	1	w.	Southern Pacific Co.
Los Gatos	Santa Clara	600	24	64.4	− 2.8	93	20	45	15†	44	0.00	− 0.05	0.00	0	0	31	0	0	n.	F. H. McCullagh.
McCloud	Siskiyou	3,410	1	60.4	.....	83	24	34	16	40	0.00	.....	0.00	0	0	31	0	0	s.	F. F. Spencer.
Macdoel	....do	4,258	4	60.3	.....	91	30	32	20	49	0.00	.....	0.00	0	0	30	1	0	nw.	Butte Valley L. Co.
Madeline	Lassen	5,270	2	61.2	.....	87	29	31	16	51	0.00	.....	0.00	0	0	31	0	0	nw.	J. H. Williams.
Magalia	Butte	2,321	7	69.2	.....	94	1†	45	13†	45	0.00	.....	0.00	0	0	31	0	0	se.	Butte C. R. R. Co.
Mammoth Tank	Imperial	257	33	92.8	− 4.0	114	19	69	5†	38	0.00	− 0.23	0.00	0	0	28	1	2	w.	Southern Pacific Co.
Marysville	Yuba	67	40	71.6	− 7.3	97	20†	48	10†	46	0.00	0.00	0.00	0	0	31	0	0	s.	Do.
Mecca	Riverside	−185	5	89.7	.....	113	30	63	4	49	0.00	.....	0.00	0	0	24	7	0	se.	E. A. Palmer.
Menlo Park **	San Mateo	64	33	66.5	− 0.2	89	19	51	30	....	0.00	− 0.04	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Merced	Merced	173	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Santa Fe Co.
Mill Creek (1)	Amador	.....	4	66.5	.....	89	31	48	22	40	0.00	.....	0.00	0	0	31	0	0	n.	Cal. Gas & Elec. Co.
Milton (near)	Calaveras	660	20	73.5	− 3.0	97	21	51	5†	38	0.00	− 0.01	0.00	0	0	26	5	0	nw.	J. H. Southwick.
Modesto **	Stanislaus	90	39	82.5	+ 2.8	97	1†	65	10†	....	0.00	0.00	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Mojave	Kern	2,751	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Do.
Mokelumne Hill	Calaveras	1,550	18	73.4	+ 0.8	94	30	53	15	34	0.00	− 0.02	0.00	0	0	31	0	0	.....	C. E. Prindle.
Mono Ranch	Ventura	3,210	5	66.4	.....	95	31	46	12†	45	0.00	.....	0.00	0	0	31	0	0	w.	Herbert Lathrop.
Montague	Siskiyou	2,450	23	69.6	− 8.1	95	24†	43	21	47	0.00	− 0.15	0.00	0	0	24	7	0	n.	I. E. Deboy.
Monterey **	Monterey	15	46	58.6	− 3.3	70	10†	46	3†	....	0.00	− 0.03	0.00	0	0	31	0	0	sw.	Southern Pacific Co.
Monterio	Kern	4,500	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Knecht.
Mount Tamalpais	Marin	2,375	12	66.1	+ 0.2	89	30	44	14	26	0.00	− 0.01	0.00	0	0	29	2	0	nw.	U. S. Weather Bureau.
Napa City	Napa	20	34	61.6	− 3.4	88	30	45	16†	42	0.00	− 0.03	0.00	0	0	4	27	0	sw.	Alex. Hull.
Napa (S. H.)	....do	60	33	61.4	− 3.6	90	20	43	15	42	0.00	− 0.03	0.00	0	0	30	1	0	sw.	W. H. Martin.
Needles	San Bernardino	477	19	92.2	− 0.1	110	19†	73	7	32	0.00	− 0.22	0.00	0	0	30	0	1	.....	Santa Fe Co.
Nellie	San Diego	5,350	2	58.1[d]	.....	91	31	46	6†	44	0.00	.....	0.00	0	0	31	0	0	.....	T. O. Bailey.
Nevada City	Nevada	2,580	19	67.0	0.0	95	21†	38	20	56	0.00	− 0.05	0.00	0	0	31	0	0	sw.	S. W. Marsh.
Newcastle	Placer	970	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. D. Kellogg.
Newhall **	Los Angeles	1,200	34	76.8	− 0.5	108	31	60	2†	....	0.00	− 0.03	0.00	0	0	29	0	2	se.	Southern Pacific Co.
Newman	Stanislaus	91	22	77.7	− 4.1	105	1	58	17	35	0.00	− 0.01	0.00	0	0	31	0	0	n.	E. S. Wangenheim.
Nimshew	Butte	2,500	7	69.2	.....	98	3	46	18	41	0.00	.....	0.00	0	0	31	0	0	s.	Cal. Gas & Elec. Co.
North Bloomfield	Nevada	3,200	14	71.6	+ 1.7	90	20†	51	24	39	0.00	− 0.02	0.00	0	0	29	2	0	s.	J. R. McIntosh.
North Fork	Madera	3,000	7	69.5	.....	96	31	42	22	50	0.00	.....	0.00	0	0	30	0	1	w.	U. S. Forest Service.
Oakdale **	Stanislaus	156	17	72.5	− 3.8	98	21†	55	5	....	0.00	− 0.02	0.00	0	0	31	0	0	nw.	Southern Pacific Co.
Oak Grove	San Diego	.....	1	70.7	.....	104	31	40	4†	55	0.00	.....	0.00	0	0	30	1	0	nw.	U. S. Forest Service.
Oakland	Alameda	36	35	60.2	− 1.1	80	20	51	6	26	T.	− 0.03	T.	0	0	7	15	9	w.	Cabot Observatory.
Oceanside	San Diego	.....	1	71.3	.....	86	19	56	28	25	T.	.....	T.	0	0	22	9	0	w.	H. D. Brodie.
Ojai Valley	Ventura	900	5	70.6	.....	108	31	44	23†	52	0.00	.....	0.00	0	0	29	2	0	sw.	W. H. Duncan.
Orland	Glenn	254	29	76.2	− 8.0	105	24	50	14	46	0.00	− 0.02	0.00	0	0	29	2	0	s.	U. S. Reclamation Service.
Orleans	Humboldt	520	8	76.6	.....	108	24	46	15	53	0.00	.....	0.00	0	0	31	0	0	.....	F. T. Hale.
Oroville (near)	Butte	250	27	74.0	− 5.3	100	30	49	15	44	0.00	− 0.02	0.00	0	0	30	1	0	s.	E. D. Fairchild.
Palermo	....do	213	20	74.2	− 2.9	106	17	48	29	51	0.00	− 0.06	0.00	0	0	21	10	0	s.	Western Pacific Co.
Palm Springs **	Riverside	584	22	89.5	− 3.7	112	16†	78	4†	....	0.00	− 0.19	0.00	0	0	26	5	0	w.	Southern Pacific Co.
Pasadena	Los Angeles	827	21	69.9	− 3.6	101	31	45	12	46	0.00	− 0.02	0.00	0	0	31	0	0	sw.	E. D. Sorver.
Paso Robles	San Luis Obispo	800	24	67.6	− 3.5	106	1	36	26	61	0.00	− 0.12	0.00	0	0	30	1	0	nw.	Dr. F. W. Sawyer.
Peachland	Sonoma	190	15	62.4	− 0.9	93	20	38	15	48	0.01	− 0.05	0.01	0	1	13	18	0	sw.	E. H. Parnell.
Penstock Camp	Tuolumne	3,750	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tuolumne Water Power Co
Placerville	El Dorado	1,875	22	69.0	− 0.8	94	1†	44	16†	46	0.00	− 0.02	0.00	0	0	31	0	0	.....	A. Baring-Gould.
Point Lobos	San Francisco	250	18	55.0	− 2.0	74	20	48	6	20	T.	− 0.06	T.	0	0	8	5	18	w.	John Hyslop.
Point Reyes	Marin	490	19	52.4	− 2.1	58	19	47	6	9	0.00	− 0.13	0.00	0	0	5	5	21	nw.	U. S. Weather Bureau.
Porterville	Tulare	464	22	78.2	− 6.6	103	21†	55	5†	45	0.00	− 0.01	0.00	0	0	31	0	0	.....	Leslie McAuliff.
Quincy	Plumas	3,400	16	59.7	− 3.9	88	29	31	20†	52	0.00	− 0.17	0.00	0	0	31	0	0	sw.	U. S. Forest Service.
Red Bluff	Tehama	307	34	76.6	− 4.4	102	24	54	15	40	0.00	− 0.02	0.00	0	0	31	0	0	se.	U. S. Weather Bureau.
Redding	Shasta	552	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. W. Moore.
Redlands	San Bernardino	1,352	18	76.2	− 1.3	106	31	51	11	46	T.	− 0.52	T.	0	0	28	2	1	w.	Santa Fe Co.
Reedley	Fresno	347	11	75.7	− 4.3	101	1	52	29	45	0.00	0.00	0.00	0	0	31	0	0	n.	So. Cal. Edison Co.
Rialto (near)	San Bernardino	2,250	5	76.2	.....	103	31	52	5	36	0.00	.....	0.00	0	0	28	2	1	se.	J. H. Cox.
Riverside	Riverside	851	29	74.8	− 1.6	110	31	48	12†	58	0.00	− 0.18	0.00	0	0	28	3	0	sw.	Southern Pacific Co.
Rocklin	Placer	249	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. R. Callahan.
Rohnerville	Humboldt	75	8	58.6	.....	74	16†	41	16	33	0.00	.....	0.00	0	0	12	16	3	nw.	U. S. Weather Bureau.
Sacramento (1)	Sacramento	71	34	68.8	− 3.3	93	30	50	10	38	0.00	0.00	0.00	0	0	31	0	0	s.	S. H. Gerrish.
Sacramento (2)	....do	35	58	67.2	− 5.4	88	20	50	10†	34	0.00	− 0.01	0.00	0	0	31	0	0	s.	Frank Kettlewell.
St. Helena	Napa	255	3	65.4	.....	99	20	40	15	52	0.00	.....	0.00	0	0	9	21	1	.....	Miss E. Ruth Abbott.
Salinas	Monterey	40	37	59.8	− 1.8	78	20	46	20	32	0.00	− 0.02	0.00	0	0	29	0	2	.....	Dr. A. K. Johnson.
San Bernardino	San Bernardino	1,054	19	75.6	+ 0.7	109	31	47	12†	58	0.00	− 0.18	0.00	0	0	29	1	1	.....	U. S. Weather Bureau.
San Diego	San Diego	93	40	67.4	− 1.3	84	19	58	13	18	0.00	− 0.12	0.00	0	0	28	3	0	nw.	Do.
San Francisco	San Francisco	207	40	56.6	− 1.4	79	20	49	30	25	0.00	− 0.01	0.00	0	0	6	18	7	sw.	E. T. Tanner.
San Jacinto	Riverside	1,550	18	76.3	+ 0.3	108	31	46	27	45	0.00	− 0.10	0.00	0	0	29	0	2	w.	U. S. Weather Bureau.
San Jose	Santa Clara	95	36	62.4	− 4.3	88	20	42	16	44	0.00	− 0.03	0.00	0	0	31	0	0	nw.	Frank Jones.
San Leandro	Alameda	48	16	61.2	− 3.4	86	20	43	20	43	T.	− 0.12	T.	0	0	24	3	4	w.	U. S. Weather Bureau.
San Luis Obispo	San Luis Obispo	201	16	63.0	− 0.5	95	20	45	15	42	0.00	0.00	0.00	0	0	18	13	0	nw.	Southern Pacific Co.
San Mateo **	San Mateo	22	37	65.5	+ 0.3	82	20	57	25	....	0.00	− 0.02	0.00	0	0	9	22	0	nw.	Do.
San Miguel **	San Luis Obispo	616	24	73.9	+ 1.0	97	30	52	26†	....	0.00	− 0.05	0.00	0	0	25	6	0	.....	Capt. W. G. Waters.
San Miguel Island	Santa Barbara	500	17	56.3	.....	66	20†	51	1†	12	0.00	− 0.02	0.00	0	0	20	0	11	nw.	Southern Pacific Co.
Sanger **	Fresno	371	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. W. Russell.
Santa Barbara	Santa Barbara	130	27	65.2	− 1.7	88	13†	50	1†	35	0.00	0.00	0.00	0	0	21	10	0	w.	Santa Clara College.
Santa Clara	Santa Clara	90	22	62.7	− 1.0	90	30	39	16	48	0.00	− 0.04	0.00	0	0	31	0	0	nw.	W. R. Springer.
Santa Cruz	Santa Cruz	20	38	61.8	− 2.7	85	19	44	12†	40	0.00	− 0.04	0.00	0	0	27	2	2	w.	Southern Pacific Co.
Santa Margarita **	San Luis Obispo	996	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Edwin Morris.
Santa Maria	Santa Barbara	220	23	67.4	+ 2.5	87	17	50	2†	28	0.00	0.00	0.00	0	0	31	0	0	w.	N. D. Ingham.
Santa Monica	Los Angeles	110	26	61.8	− 8.5	79	18	51	13†	26	0.00	− 0.03	0.00	0	0	28	2	1	w.	M. L. McDonald, jr.
Santa Rosa	Sonoma	181	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Selma **	Fresno	311	25	80.6	− 2.5	98	31	68	9†	....	0.00	0.00	0.00	0	0	31	0	0	nw.	M. Lewis.
Seven Oaks	San Bernardino	5,000	1	67.4	.....	92	31	43	12	41	0.00	.....	0.00	0	0	31	0	0	w.	Dr. T. J. Edgecomb.
Shasta	Shasta	1,048	15	77.0	− 2.4	108	13	45	10	54	0.00	− 0.06	0.00	0	0	31	0	0	nw.	

TABLE 1.—*Climatological data for August, 1911. District No. 11*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
California—Continued.																				
Sierra Madre	Los Angeles	1,400	14	74.3	+ 2.1	100	31	55	7†	38	0.00	− 0.07	0.00	0	0	31	0	0	s.	Mrs. A. C. Gregory.
Sierraville	Sierra	5,000	1	59.7	.....	92	29	28	15	59	0.00	.....	0.00	0	0	31	0	0	.....	C. D. Johnson.
Sisson	Siskiyou	3,555	22	61.8	− 5.8	88	31	33	15	48	0.00	− 0.15	0.00	0	0	31	0	0	n.	Southern Pacific Co.
Soledad**	Monterey	188	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Do.
Southeast Farallon	San Francisco	30	8	53.8	.....	59	28	48	3	6	T.	.....	T.	0	0	8	4	19	nw.	U. S. Weather Bureau.
Sonora	Tuolumne	1,825	23	72.4	.....	95	31	52	5†	43	0.00	− 0.05	0.00	0	0	31	0	0	sw.	Chas. P. Jones.
Squirrel Inn	San Bernardino	5,280	1	66.8	.....	89	31	50	13†	31	0.00	.....	0.00	0	0	30	1	0	s.	A. D. Frantz.
Stirling City	Butte	3,525	7	67.7	.....	92	5†	42	28	50	0.00	.....	0.00	0	0	31	0	0	se.	Butte Co. R. R. Co.
Stockton (S. H.)	San Joaquin	23	40	68.8	− 3.7	94	30	50	11†	39	0.00	− 0.01	0.00	0	0	31	0	0	nw.	State Hospital.
Storey	Madera	296	11	70.4	− 7.0	103	31	41	17	61	0.00	0.00	0.00	0	0	31	0	0	nw.	Santa Fe Co.
Suisun**	Solano	20	31	72.0	+ 1.3	87	24	61	27	....	0.00	− 0.04	0.00	0	0	26	1	4	w.	Southern Pacific Co.
Summerdale	Mariposa	5,270	15	64.7	− 0.8	85	31	47	15	32	0.00	− 0.14	0.00	0	0	30	1	0	s.	Mrs. J. E. Lowry.
Summit	Placer	7,017	38	54.0	− 6.3	78	27	32	16	39	0.00	− 0.05	0.00	0	0	31	0	0	sw.	Southern Pacific Co.
Susanville	Lassen	4,175	22	63.2	− 7.5	86	30	39	20	40	0.00	− 0.12	0.00	0	0	28	3	0	.....	James Branham.
Tamarack	Alpine	8,000	5	54.0	.....	74	20†	32	12†	40	0.00	.....	0.00	0	0	26	5	0	se.	William Bennett.
Tehachapi**	Kern	3,964	34	78.5	+ 4.0	86	2	69	31	....	0.00	− 0.11	0.00	0	0	....	....	....	.....	Southern Pacific Co.
Tehama**	Tehama	220	40	78.6	− 2.7	99	2	66	15†	....	0.00	− 0.05	0.00	0	0	31	0	0	.....	Do.
Tejon Rancho	Kern	1,500	9	72.6	.....	89	1†	57	12†	24	0.00	.....	0.00	0	0	31	0	0	n.	S. E. Bailey.
Three Rivers	Tulare	870	1	74.5	.....	102	1	51	15	48	0.00	.....	0.00	0	0	31	0	0	sw.	E. D. Barton.
Towle	Placer	3,704	25	66.3	− 2.4	89	31	45	12†	42	0.00	− 0.12	0.00	0	0	31	0	0	sw.	Southern Pacific Co.
Tracy**	San Joaquin	64	31	79.6	+ 2.1	95	3†	60	8	....	0.00	− 0.01	0.00	0	0	25	6	0	nw.	Do.
Ukiah	Mendocino	620	18	70.5	− 1.3	111	22	40	15	62	0.00	− 0.01	0.00	0	0	29	2	0	nw.	Dr. Geo. McCowen.
Upland	San Bernardino	1,750	14	73.0	0.0	102	17	48	11	44	0.00	− 0.01	0.00	0	0	31	0	0	w.	A. P. Harwood.
Upper Lake	Lake	1,350	26	72.8	− 0.4	104	30	42	15	52	0.00	− 0.06	0.00	0	0	31	0	0	nw.	C. M. Hammond.
Vacaville	Solano	175	23	69.5	− 5.7	99	30	45	26	50	0.00	− 0.04	0.00	0	0	31	0	0	sw.	G. O. Coburn.
Valley Springs**	Calaveras	673	22	75.0	− 3.3	99	1	62	11†	....	0.00	− 0.01	0.00	0	0	31	0	0	nw.	Southern Pacific Co.
Visalia	Tulare	334	23	73.1	− 5.7	100	21	46	10†	50	0.00	− 0.01	0.00	0	0	30	1	0	.....	Santa Fe Co.
Warner Springs	San Diego	3,165	3	71.8	.....	98	31	45	25	42	0.00	.....	0.00	0	0	31	0	0	.....	Mrs. F. S. Sandford.
Wasco	Kern	336	11	77.9	− 2.1	110	6	44	17	57	0.00	− 0.02	0.00	0	0	....	....	....	.....	Santa Fe Co.
Watsonville	Santa Cruz	23	15	59.3	− 3.5	85	19	39	15†	46	0.00	0.00	0.00	0	0	7	23	1	se.	Spreckels Sugar Co.
Weitchpec	Humboldt	1,700	1	66.0	.....	94	24†	40	15	40	0.00	.....	0.00	0	0	31	0	0	s.	M. E. Lathrop.
Westley**	Stanislaus	90	22	76.8	− 2.8	95	30	60	10†	....	0.00	0.00	0.00	0	0	31	0	0	.....	Southern Pacific Co.
Wheatland	Yuba	84	24	71.2	− 4.3	94	2†	49	16	40	0.00	− 0.04	0.00	0	0	31	0	0	s.	Wm. Lumbard.
Willows	Glenn	136	32	73.0	− 8.6	98	1	49	14	40	0.00	− 0.04	0.00	0	0	28	2	1	se.	L. C. Stiles.
Yosemite	Mariposa	3,945	7	65.8	.....	95	18†	35	19	59	0.00	.....	0.00	0	0	31	0	0	n.	J. P. Kelly.

a, b, c, etc., indicate respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for August, 1911. District No. 11, California.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon.																																	
Klamath Agency	Klamath																																0.00
Klamath Falls	do																																.....
Lakeview	Pitt																																.....
Long Valley	do																																0.00
Merrill	Int. drainage																																0.00
Yonna	do																																0.00
California.																																	
Abertine	Sacramento																																.....
Aguanga	Coast																																0.00
Alameda	do																																0.00
Alturas	Sacramento																																0.00
Angels Camp	San Joaquin																																0.00
Angiola	do																																0.00
Antioch	do																																0.00
Aptos	Coast																																0.00
Arrowhead Springs	do																																0.00
Auburn	Sacramento																																0.00
Avalon	Ocean																																0.00
Azusa	Coast																																0.00
Bagdad	Desert																																0.00
Bakersfield	San Joaquin																																0.00
Barstow	Desert																																0.00
Bear River	San Joaquin																																.....
Bear Valley (1)	Sacramento																																.....
Bear Valley (2)	San Joaquin																																.....
Bear Valley Dam	Coast																																0.00
Belotta	San Joaquin																																0.00
Ben Lomond	Coast																																0.00
Berkeley	do																																0.00
Biggs	Sacramento																																0.00
Bishop	Owens																																.....
Bishop Creek	do																																0.00
Blocksburg	Coast																																0.00
Blue Canon	Sacramento																																0.00
Blythe	Desert																																0.00
Boulder Creek	Coast																																0.00
Bowmans Dam	Sacramento																																.....
Branscomb	Coast																																0.00
Brush Creek	Sacramento																																0.00
Burney	do																																0.00
Butte Valley	do																																.....
Calexico	Desert																																0.00
Caliente	do																																0.00
Calistoga	Coast																																0.00
Campbell	do																																0.00
Campo	do																																0.00
Camptonville (near)	Sacramento																																0.00
Cedarville	M't'n Lakes																																0.00
Chester	Sacramento																																0.00
Chico	do																																0.00
Chico (near)	do																																0.00
China Flat	Coast																																0.00
Chino	do																																0.00
Cisco	Sacramento																																0.00
Claremont	Coast										T.																						T.
Cloverdale	do																																0.00
Colfax	Sacramento																																0.00
Colgate	do																																0.00
Colusa	do																																0.00
Corning	do																																0.00
Corona	Coast																																.....
Cuyamaca	do																									T.							T.
Daunt	San Joaquin																																0.00
Davisville	Sacramento																																0.00
Deer Creek	do																																0.00
Del Monte	do																																0.00
Delta	do																																0.00
Denair	San Joaquin																																0.00
Des Canso	Coast																																0.00
Dinuba	San Joaquin																																.....
Dobbins	Sacramento																																0.00
Downieville	do																																0.00
Dudleys	San Joaquin																																0.00
Dunnigan	Sacramento																																0.00
Dunsmuir	do																																0.00
Durham	do																																0.00
Dyerville	Coast																																.....
East Park	Sacramento																																0.00
Edgewood	Klamath																																0.00
Edison	San Joaquin																																0.00
El Cajon	Coast																																0.00
Electra	San Joaquin																																0.00
Elsinore	Coast																																0.00
Emigrant Gap	Sacramento																																0.00
Escondido	Coast																																0.00
Eureka	Coast			.01	.04	.01					.02																						0.08
Fairmont	do																																0.00
Farmington	San Joaquin																																0.00
Felton	Coast																																0.00
Firebaugh	San Joaquin																																0.00
Folsom	Sacramento																																0.00
Fordyce Dam	do																																0.00
Fort Bragg	Coast																																0.00
Fort Ross	do																																.....
Fouts Springs	Sacramento																																0.00
Fredalba	Coast																																0.00
Fresno	San Joaquin																																0.00
Fruto	Sacramento																																0.00
Galt	San Joaquin																																.....
Georgetown	do																																0.00

TABLE 2.—*Daily precipitation for August, 1911. District No. 11*—Continued.

Stations	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Contd.																																	
Gilroy	Coast.																																0.00
Gilta	do																																0.00
Glendora	do																																
Glen Ranch	do																																0.00
Glennville	San Joaquin.																																0.00
Glenwood	Coast.																																0.00
Gold Run	Sacramento.																																0.00
Gonzales	Coast.																																0.00
Grass Valley	Sacramento.																																0.00
Greenville	do																																0.00
Gridley	do																																0.00
Groveland	San Joaquin.																																0.00
Guinda	Sacramento.																																
Hanford	San Joaquin.																																0.00
Head Dam	Sacramento.																																0.00
Healdsburg	Coast.																																0.00
Hearst	do																																0.00
Heber	Desert.																																0.00
Helen Mine	Coast.																																0.00
Hesperia	Desert.																																
Hetch Hetchy	San Joaquin.																																
Holcomb	Coast.																																0.00
Hollister	do																																0.00
Hornbrook	Klamath.																																0.00
Hot Springs	San Joaquin.																																0.00
Hullville	Coast.																																0.00
Idylwild	do																																0.00
Independence	Owens.																																0.00
Indio	Desert.																																0.00
Inskip	Sacramento.																																0.00
Ione	San Joaquin.																																0.00
Jacksonville	do																																0.00
Jamestown	do																																0.00
Jenny Lind	do																																0.00
Jolon	Coast.																																
Julian	do																																0.00
Kennedy Mine	San Joaquin.																																0.00
Kennett	Sacramento.																																0.00
Kentfield	Coast.																																0.00
Kernville	San Joaquin.																																
King City	Coast.																																0.00
Knights Landing	Sacramento.																																0.00
La Grange	San Joaquin.																																0.00
Lake Eleanor	do																																
Lakeside	Coast.																																0.00
La Porte	Sacramento.																																0.00
Lathrop	San Joaquin.																																0.00
Laurel	Coast.																																0.00
Laytonville	do																																
Le Grand	San Joaquin.																																0.00
Lemon Cove	do																																0.00
Lick Observatory	Coast.																																0.00
Livermore	do																																
Lodi	San Joaquin.																																0.00
Lone Pine	Owens.																																0.00
Long Camp	San Joaquin.																																
Long Valley	Mountain Lakes.																																0.00
Lordsburg	Coast.																																0.00
Los Alamos	do																																
Los Angeles	do																																0.00
Los Banos	San Joaquin.																																0.00
Los Gatos	Coast.																																0.00
Los Molinos	Sacramento.																																
Low Observatory	Coast.																																0.00
McCloud	Sacramento.																																0.00
Macdoel	Klamath.																																0.00
Madeline	M't'n Lakes.																																0.00
Magalia	Sacramento.																																0.00
Mammoth Tank	Desert.																																0.00
Mariposa	San Joaquin.																																
Marysville	Sacramento.																																0.00
Mecca	Desert.																																0.00
Melones	Sacramento.																																0.00
Menlo Park	Coast.																																0.00
Merced	San Joaquin.																																
Merced Falls	do																																0.00
Mesa Grande	Coast.																																0.00
Mill Creek (1)	San Joaquin.																																0.00
Mill Creek (2)	Coast.																																0.00
Mills College	do																																
Milo	San Joaquin.																																0.00
Milton (near)	do																																0.00
Modesto	do																																0.00
Mojave	Desert.																																
Mokolumne Hill	San Joaquin.																																0.00
Mono Ranch	Coast.																																0.00
Monroeville	San Joaquin.																																
Montague	Klamath.																																0.00
Monterey	Coast.																																0.00
Monterio	San Joaquin.																																
Montgomery Creek	Sacramento.																																
Mount Tamalpais	Coast.																																0.00
Mount St. Helena	do																																
Napa City	do																																0.00
Napa (S. H.)	do																																0.00
Needles	Desert.																																0.00
Nellie	Coast.																																0.00
Nevada City	Sacramento.																																0.00
Newcastle	do																																
Newhall	Coast.																																0.00
Newman	San Joaquin.																																0.00

TABLE 2.—*Daily precipitation for August, 1911. District No. 11*—Continued.

Stations.	Waterahed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Cont'd.																																	
Nimshew	Sacramento																																0.00
North Bloomfield	do																																0.00
North Fork	San Joaquin																																0.00
North Lakeport	Coast																																0.00
Oakdale	San Joaquin																																0.00
Oakgrove	Coast																																0.00
Oakland	do				T.	T.				T.	T.																						T.
Oakville	do																																0.00
Oceanside	do																									T.							T.
Ojai Valley	do																																0.00
Orland	Sacramento																																0.00
Orleans	Klamath																																0.00
Oroville	Sacramento																																0.00
Ozeana	Coast																																0.00
Palermo	Sacramento																																0.00
Palm Springs	Desert																																0.00
Parkfield	Coast																																0.00
Pasadena	do																																0.00
Paso Robles	do																																0.00
Peachland	do							T.			T.																	.01					0.01
Penstock Camp	San Joaquin																																
Phoenix Dam	do																																0.00
Pilot Creek	Sacramento																																0.00
Pinchot	Coast																																
Pine Crest	do				T.																												T.
Placerville	Sacramento																																0.00
Point Lobos	Coast					T.			T.																								T.
Point Loma	do	.01																			.03											.02	0.06
Point Reyes	do																																0.00
Polasky	San Joaquin																																0.00
Porterville	do																																0.00
Portulaca	do																																
Prattville	Sacramento																																
Priest Valley	Coast																																
Quincy	Sacramento																																0.00
Red Bluff	do																																0.00
Redding	do																																
Redlands	Coast	T.																															T.
Redley	San Joaquin																																0.00
Represa	Sacramento																																0.00
Realto (near)	Coast																																0.00
Rio Vista	Sacramento																																0.00
Riverside	Coast																																
Riocklin	Sacramento																																
Rohnerville	Coast																																0.00
Sacramento (1)	Sacramento																																0.00
Sacramento (2)	do																																0.00
St. Helena	Coast																																0.00
Salinas	do																																0.00
San Bernardino	do																																0.00
San Diego	do																																0.00
San Francisco	do																																0.00
San Jacinto	do																																0.00
San Jose	do																																T.
San Leandro	do			T.	T.																												0.00
San Luis Obispo	do																																0.00
San Mateo	do																																0.00
San Miguel	do																																0.00
San Miguel Island	Ocean																																
Sanger	San Joaquin																																0.00
Santa Ana River	Coast																																0.00
Santa Barbara	do																																0.00
Santa Clara	do																																0.00
Santa Cruz	do																																
Santa Margarita	do																																0.00
Santa Maria	do																																0.00
Santa Monica	do																																
Santa Rosa	do																																0.00
Sausalito	do																																0.00
Selma	San Joaquin																																0.00
Seven Oaks	Coast																																0.00
Shasta	Sacramento																																0.00
Shingle Springs	San Joaquin																																0.00
Sierra Madre	Coast																																0.00
Sierraville	M't'n lakes																																
Sisquoc Ranch	Coast																																0.00
Sisson	Sacramento																																
Soledad	Coast																																0.00
Sonora	San Joaquin														T.																		T.
S. E. Farrallon	Ocean																																0.00
Spreckels	Coast																																0.00
Squirrel Inn	do																																0.00
Stirling City	Sacramento																																0.00
Stockton (S. H.)	San Joaquin																																0.00
Storey	do																																0.00
Suisun	Sacramento																																0.00
Summerdale	San Joaquin																																0.00
Summit (1)	Sacramento																																
Summit (2)	Coast																																
Susanville	M't'n lakes																																0.00
Tamarack	Sacramento																																0.00
Tehachapi	San Joaquin																																0.00
Tehama	Sacramento																																0.00
Tejon Rancho	San Joaquin																																0.00
Three Rivers	do																																0.00
Towle	Sacramento																																0.00
Tracy	San Joaquin																																0.00
Tulare	do																																0.00
Tustin (near)	Coast																																0.00
Ukiah	do																																0.00
Upland	do																																0.00
Upper Lake	Sacramento																																0.00

TABLE 2.—*Daily precipitation for August, 1911. District No. 11*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Contd.																																	
Upper Mattole	Coast																																0.00
Vacaville	Sacramento																																0.00
Valley Springs	San Joaquin																																0.00
Visalia	do																																0.00
Warner Springs	Coast																																0.00
Wasco	San Joaquin																																0.00
Watsonville	Coast																																0.00
Weitchpec	Klamath																																0.00
West Branch	Sacramento																																0.00
Westley	San Joaquin																																0.00
West Point	do																																
West Saticoy	Coast																																0.00
Wheatland	Sacramento																																0.00
Willows	do																																0.00
Yosemite	San Joaquin																																0.00

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 11, California.*

Date.	Lakeview, Oreg.		California.																							
			Alturas.		Barstow.		Branscomb.		Brawly.		Colusa.		Eureka.		Fresno.		Independence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porterville.		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	.....	.....	81	41	107	66	86	44	106	75	89	58	59	52	100	64	97	59	84	62	72	62	93	47	100	58	97	61
2	.....	.....	86	39	107	84	90	47	.....	.....	93	58	59	52	96	63	93	61	78	62	78	61	92	47	101	57	99	71
3	.....	.....	85	42	105	65	85	44	.....	.....	88	57	58	51	97	65	94	59	77	61	71	45	90	47	100	60	94	66
4	.....	.....	85	42	104	65	85	42	.....	.....	81	54	57	52	92	58	94	60	76	59	70	56	88	46	98	60	90	63
5	.....	.....	83	44	107	67	87	45	.....	.....	84	52	55	52	92	55	93	63	75	58	68	56	91	43	96	55	91	61
6	.....	.....	87	42	107	60	88	48	.....	.....	89	55	59	52	96	58	92	61	76	58	75	64	91	45	100	56	93	63
7	.....	.....	86	42	103	60	79	41	106	83	84	53	60	54	98	60	94	57	76	58	69	59	92	44	101	57	90	64
8	.....	.....	87	39	108	62	76	40	105	65	84	52	61	54	94	59	94	54	76	58	72	58	88	45	98	59	88	58
9	.....	.....	84	40	104	65	80	38	102	79	82	53	59	54	93	61	92	55	76	58	70	54	92	43	97	57	89	59
10	.....	.....	87	38	105	65	80	37	.....	.....	84	50	57	53	92	56	88	52	77	59	69	57	87	42	96	56	90	58
11	.....	.....	86	41	99	55	79	36	.....	.....	83	51	60	54	92	56	88	54	76	58	66	55	84	39	96	56	87	60
12	.....	.....	84	34	104	54	76	37	.....	.....	85	52	60	53	93	57	90	52	76	55	70	57	88	40	95	56	87	57
13	.....	.....	86	36	106	58	72	36	.....	.....	85	53	60	54	95	56	89	50	79	56	73	58	86	41	96	55	89	59
14	.....	.....	81	35	102	59	70	36	.....	.....	90	50	61	50	94	60	89	51	83	61	64	44	87	42	95	63	86	60
15	.....	.....	84	37	103	64	75	38	.....	.....	86	51	63	48	92	57	90	53	86	60	72	47	90	40	93	65	87	54
16	.....	.....	91	30	107	63	76	42	110	.....	84	52	64	48	95	57	94	54	83	59	76	56	90	40	96	64	92	58
17	.....	.....	88	42	108	65	77	43	107	80	82	55	63	50	92	56	97	60	90	61	71	54	87	43	94	64	92	59
18	.....	.....	87	36	112	69	79	44	108	83	86	53	64	56	95	58	100	53	95	64	75	57	90	40	96	56	91	60
19	.....	.....	83	39	109	74	83	40	111	77	88	54	65	54	94	58	98	59	93	67	71	57	90	41	97	57	90	63
20	.....	.....	83	35	110	70	85	44	107	79	91	53	64	54	96	58	96	55	92	66	82	60	94	38	97	55	97	61
21	.....	.....	88	37	106	66	89	48	105	79	94	55	61	54	100	58	95	59	84	62	82	67	95	42	103	60	95	60
22	.....	.....	90	36	104	68	90	50	.....	.....	92	53	59	54	97	61	92	54	82	62	78	66	95	42	100	62	94	61
23	.....	.....	89	38	102	65	92	52	.....	.....	89	61	60	54	97	58	92	60	79	61	82	67	95	44	98	62	96	61
24	.....	.....	90	43	105	64	93	53	104	76	91	62	57	53	99	60	93	59	78	60	86	71	95	45	99	57	102	64
25	.....	.....	91	37	104	64	89	46	106	.....	89	60	55	52	100	62	93	62	81	60	78	63	90	47	102	57	96	66
26	.....	.....	91	39	104	65	89	48	110	75	86	59	56	51	92	60	92	54	76	58	72	53	92	43	95	62	95	55
27	.....	.....	92	39	100	60	90	48	107	77	82	50	56	52	92	55	91	55	75	58	67	46	85	45	95	56	91	57
28	.....	.....	90	38	104	64	91	50	.....	.....	85	51	56	52	93	56	90	54	75	57	69	45	92	46	96	56	93	55
29	.....	.....	92	40	103	63	91	52	106	65	90	53	56	51	97	57	91	54	82	57	82	67	89	45	98	58	98	60
30	.....	.....	96	40	105	61	90	49	103	65	92	55	58	48	101	61	94	55	86	61	89	72	94	48	101	59	97	66
31	.....	.....	91	39	107	63	83	45	110	72	90	58	59	50	104	65	93	57	94	62	77	68	93	46	103	62	94	62
Mns.	.....	.....	87.2	38.7	105.0	64.2	83.7	44.0	106.6[a]	.....	87.3	54.3	59.4	52.2	95.5	58.9	92.8	56.3	81.2	59.9	74.1	58.1	90.5	43.4	97.8	58.6	92.6	60.7

Date.	California.																									
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Sisson.		Stockton.		Summit.		Susanville.		Yosemite.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	99	59	84	54	69	60	61	50	74	50	72	50	75	50	.....	.....	78	42	88	56	68	44	82	46	92	42
2	91	57	80	56	68	64	59	51	79	50	68	50	70	59	.....	.....	82	42	90	57	71	40	80	46	94	46
3	89	57	77	54	69	63	58	51	79	52	68	52	69	58	.....	.....	81	41	83	55	68	36	83	50	93	40
4	87	59	76	52	70	63	57	51	71	53	69	52	68	54	.....	.....	83	47	80	54	68	37	82	49	90	43
5	87	53	78	52	68	64	56	50	70	54	71	52	68	50	.....	.....	82	46	81	52	68	43	82	49	82	42
6	92	54	84	51	70	64	56	49	73	53	71	52	67	51	.....	.....	83	44	85	52	69	41	83	48	90	42
7	93	53	77	53	71	61	58	50	72	52	70	52	68	56	.....	.....	80	44	82	52	71	40	81	51	93	40
8	94	54	80	53	70	61	61	50	71	49	72	52	74	57	.....	.....	78	40	82	52	68	47	81	44	92	41
9	91	54	79	53	69	61	57	51	72	49	67	48	73	59	.....	.....	82	43	82	53	68	45	79	44	89	40
10	91	53	79	50	70	61	59	50	71	51	66	52	70	58	.....	.....	86	44	80	51	67	36	81	47	88	41
11	94	51	77	52	71	59	60	50	73	49	70	52	75	56	.....	.....	79	39	80	50	66	37	79	42	88	39
12	94	52	79	52	70	59	62	50	71	45	73	46	79	54	.....	.....	78	39	81	50	65	40	77	40	88	39
13	95	54	83	54	73	58	62	50	72	45	81	46	88	54	.....	.....	81	42	83	53	64	40	79	41	89	38
14	98	55	77	53	76	60	63	53	72	46	80	46	82	55	.....	.....	80	41	78	54	61	34	79	40	90	38
15	98	58	86	52	79	62	62	51	75	43	77	45	80	54	.....	.....	81	33	82	50	68	37	77	41	90	38
16	100	57	87	53	76	60	68	51	79	42	75	50	88	53	.....	.....	82	34	86	51	66	32	80	40	92	38
17	105	60	88	55	78	62	66	53	76	45	88	50	85	53	.....	.....	82	39	84	52	70	42	81	42	92	38
18	105	65	87	56	80	63	67	52	76	47	82	53	86	53	.....	.....	83	38	86	55	68	39	81	42	95	38
19	102	65	88	55	84	66	71	53	79	46	90	57	86	54	.....	.....	80	35	86	55	66	37	80	40	93	35
20	102	63	92	57	75	64	79	54	88	44	95	53	85	56	.....	.....	73	42	93	56	70	38	76	39	95	36
21	97	61	90	58	73	66	79	51	76	46	78	48	75	54	.....	.....	82	40	90	56	69	37	80	40	95	37
22	92	56	86	52	74	63	61	52	77	54	72	50	74	60	.....	.....	84	45	89	51	70	43	79	43	94	38
23	94	56	90	52	74	62	61	51	77	49	72	50	68	55	.....	.....	82	44	90	52	70	38	84	48	93	39
24	90	63	90	54	74	65	61	50	82	51	73	50	75	53	.....	.....	83	42	91	52	72	41	80	48	93	42
25	93	59	87	53	74	60	60	50	75	51	68	50	71	52	.....	.....	81	41	86	53	73	34	84	47	93	41
26	89	56	79	51	70	64	59	52	72	51	68	50	67	58	.....	.....	85	42	80	50	75	38	84	50	94	38
27	88	53	79	51	70	61	62	53	75	51	68	52	68	51	.....	.....	84	41	79	50	78	43	85	51	91	42
28	94	52	87	52	70	63	63	53	73	52	72	52	69	52	.....	.....	84	45	84	50	73	42	84	50	92	40
29	100	56	91	53	72	62	66	50	81	55	77	52	77	50	.....	.....	85	46	88	52	74	42	84	51	90	42
30	105	59	93	59	77	60	67	49	87	51	92	51	82	56	.....	.....	87	46	94	56	75	54	86	50	95	44
31	106	64	85	56	72	60	61	52	75	53	90	53	87	58	.....	.....	88	44	88	56	72	44	85	45	95	45
Mns.	95.3	57.0	84.0	53.5	72.8	62.1	62.0	51.1	75.6	49.3	75.3	50.6	75.8	54.6	.....	.....	81.9	41.6	84.8	52.8	69.4	38.7	81.2	45.3	91.6	40.1

CLIMATOLOGICAL DATA FOR AUGUST, 1911.

DISTRICT No. 12, COLUMBIA VALLEY.

EDWARD A. BEALS, District Editor.

GENERAL SUMMARY.

The weather during August was favorable for farming operations and outdoor work of every description. There was plenty of water for irrigation purposes and the ranges, although dry, furnished the average amount of feed for stock. Numerous small forest fires were burning at the end of the month, but the damage done by them was less than usual. The run of salmon in the Columbia River was better than it has been for a number of years. No severe storms occurred, and there was scarcely any interruption to traffic by washouts. Country roads were reported in good condition throughout the month, and general satisfaction was expressed in all sections regarding the effect of the month's weather on crops.

TEMPERATURE.

The monthly mean temperature for Oregon and Washington averaged about 1° below normal, no very great departures being noted. Idaho and those portions of Montana, Wyoming, Nevada, and Utah lying within this district report temperatures considerably lower than the average for August, the average deficiency for this portion of the district being about 2.5°. The greatest negative departure occurred in south-central Idaho.

The average temperature for the district, as determined from the records of 259 stations, was 64.3°, which is 1.3° below the average for August. The mean temperatures ranged between 77.4° at Blalock, Oreg., and 53.5° at Tatoosh Island, Wash. The highest temperature recorded was 104° at Blalock, Oreg., on the 19th, and also at Kennewick, Wash., on the 17th. The lowest was 22° at Chesterfield, Idaho, on the 25th.

In the eastern portion of the district the warmest period was from the 16th to the 19th, and in the western portion, from the 21st to the end of the month. The coolest periods were from the 20th to the 25th in the eastern and from the 16th to the 18th in the western portion.

PRECIPITATION.

The average monthly rainfall exceeded the normal throughout the extreme northern portion of the district, while over the central and southern portions it was generally below normal. Over large areas in the southern half of the district no precipitation occurred during the month. Where rain was recorded, it fell generally during the first 8 days of the month, although occasional showers occurred between the 19th and the 26th, principally west of the Cascades and in western Montana.

The average for the district, as determined from the records of 368 stations, was 0.41 inch, which is 0.21 inch below the normal for August, but is just double the amount for August, 1910. The greatest monthly amount recorded was 2.96 inches, at Sedro-Woolley, Wash. One hundred and twelve stations reported no precipitation during the month. The greatest 24-hour rainfall was 1.97 inches, at Sedro-Woolley, Wash., on the 20th.

THE RIVERS.

The rivers continued to fall during August, and the average stage for the month was much lower than for July, but the departures from normal were not large enough in any case to be worthy of special mention.

The Columbia River averaged 0.2 foot below the normal stage for August. The departure from normal at The Dalles was −1.7 feet; at Cascade Locks, with a normal determined from a shorter period of observations, the departure was +0.1 foot. The highest stages occurred on the 1st of the month and the lowest on the 31st. Compared with the mean stage for July, the average was 9.8 feet lower.

The Willamette averaged 0.5 foot below the August normal; it was 0.5 foot below at Portland and 0.4 foot below at Salem. The highest readings occurred during the first few days of the month and the lowest during the last few days, with a maximum stage of 8.4 feet at Portland on the 1st and a minimum stage of −1 foot at Harrisburg from the 26th to 31st, inclusive.

The mean stage on the Snake River was 0.1 foot above the normal. The highest stage reported was 2.8 feet at Riparia on the 1st, and the lowest 0.5 foot at Lewiston on the last 3 days of the month.

MISCELLANEOUS.

Thunderstorms were general over the district from the 3d to 5th and 13th to 15th of the month, and local thunderstorms occurred on various dates at a number of stations, most of which are in the eastern part of the district. Hailstorms occurred at several stations in the Willamette Valley on the 14th and at a few stations in the eastern section during the month.

The prevailing wind direction was west, and the highest maximum wind velocity reported was 50 miles, from the southwest, on the 14th at Walla Walla, Wash. The next highest velocity was at Lewiston, Idaho, where a maximum velocity of 49 miles from the north occurred on the 4th. Dust storms occurred at a number of stations in the central and eastern sections.

Sunshine was slightly below normal for the month, the greatest deficiency being in the western part of the district. Killing frosts occurred at a few stations in the eastern mountainous section; elsewhere the frosts were light and of minor importance.

TABLE 1.—*Climatological data for August, 1911. District No. 12, Columbia Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Montana.																				
Anaconda	Deer Lodge	5,300	10	57.9	− 3.5	86[a]	19	35[a]	27	40	1.83	+ 0.99	0.65	0.0	9	21	4	6		C. D. Demond.
Butte	Silver Bow	5,716	17	60.4	− 2.3	86	18	34	24	39	1.70	+ 0.79	0.40	0.0	6	13	7	11	nw.	J. R. Wharton.
Columbia Falls	Flathead	3,100	16	60.7	− 1.6	94	19	31	26	51	1.78	+ 0.32	1.02	0.0	8	15	8	8	s.	J. M. Grist.
Como**	Ravalli		3	60.9	.....	97	19	38	24	45	1.26	.....	0.53	0.0	6	23	5	3	.....	Hiram Platt.
East Anaconda	Deer Lodge	5,500	6	60.2	.....	86	19	38	27	36	1.46	.....	0.52	0.0	8	21	4	6	ne.	C. D. Demond.
Fortine	Lincoln	2,975	6	56.9	.....	88	18	27	22	53	1.36	.....	0.70	0.0	10	12	8	11	w.	Mike Petery.
Hamilton	Ravalli	3,575	8	61.4	.....	90[a]	19	40[a]	21†	39[a]	1.62	.....	0.70	0.0	6	22[a]	7[a]	1[a]	w.	Bitter Root Valley Irrig. Co.
Hat Creek	Powell	6,000	2								2.13	.....	0.80	0.0	10	8	14	9	w.	M. K. Landreth.
Kalispell	Flathead	2,965	13	60.4	− 2.5	88	31	38	26	39	1.44	+ 0.55	0.78	0.0	9	13	12	6	w.	Weather Bureau.
Libby	Lincoln	2,055																		Miss M. E. Simmonds.
Lost Creek	Deer Lodge	5,200	2								1.68	.....	0.88	0.0	4	16	9	6	w.	Frank Henault.
McGinnis Meadows	Lincoln		2																	H. L. Bebee.
Missoula	Missoula	3,225	32	63.8	+ 0.8	96	19	36	24	52	0.43	− 0.38	0.24	0.0	5				se.	Weather Bureau.
Ophir	Powell	8,800	2								2.44	.....	0.48	0.0	8	18	6	7	w.	E. S. Wilton.
Ovando	....do	4,207	12	54.6	− 3.3	90	18	28	13	56	1.18	+ 0.24	0.49	0.0	8	0	31	0	w.	S. B. Muchmore.
Philipsburg	Granite	5,275	8																	G. T. Bramble.
Plains	Sanders	2,475	13	61.8	− 2.0	90	30	37	21	42	1.38	+ 0.45	0.80	0.0	3	22	0	9	sw.	M. H. Fierce.
Pleasant Valley	Flathead	3,500	4	54.7	.....	87	19	25	27	57	1.72	.....	0.40	0.0	12	15	13	3	w.	A. D. Stillman.
Polson	....do	2,920	4	62.0	.....	88	31	40	25	38	0.98	.....	0.30	0.0	9					F. P. Brown.
Proctor	....do	2,800	7	60.4	.....	88	31	38	24†	42	2.30	.....	0.70	0.0	9	17	2	12	.....	C. E. Proctor.
Saint Ignatius	Missoula	2,700	6	60.6	.....	91	19	35[c]	24	45[c]	1.19	.....	0.31	0.0	10	19	8	4	nw.	U. S. Reclamation Service.
Saint Regis	....do	2,650	4	59.9	.....	95	18	29	24†	58	1.55	.....	0.67	0.0	5	7	19	5	ne.	R. D. Lee.
Saltese	....do	3,600	7								1.95	.....	1.33	0.0	4	27	0	4	w.	E. K. Tarbox.
Thompson Falls	Sanders	2,462										.....	0.46	0.0	13	13	7	11	w.	R. H. Bushnell.
Willow Glen St'k Farm	Deer Lodge	5,064	1	57.4	.....	85[a]	16†	32	23†	44[a]	1.51	.....	0.62	0.0	7	11	14	6	sw.	G. E. Luce.
Wyoming.																				
Afton	Uinta	6,200	7	58.3	− 1.7	90	17†	24	21	54	0.00	− 1.19	0	0	0	30	1	0	.....	A. V. Call.
Alta	....do	7,000	1	55.1	.....	86	17†	21	24	52	0.21	.....	0.18	0	2	15	15	1	sw.	Mrs. Lucy Brown.
Bedford	....do	5,900	11	57.4	− 1.4	93	23	25	21†	61	0.00	− 1.35	0	0	0	31	0	0	w.	C. G. Heiner.
Bechler River	Yellowstone Park.										0.62	.....	0.45	0	6	25	6	0	s.	U. S. Army.
Moran	Uinta																			U. S. Reclamation Service.
Snake River	Yellowstone Park.	7,000	5	53.9	.....	86	19	26	21†	54	0.40	.....	0.20	0	3	22	7	2	w.	U. S. Army.
Nevada.																				
San Jacinto	Elko	.....	6	60.6	.....	93	17	29	21	55	0.00	.....	0	0	0	26	5	0	sw.	Mose Jones.
Utah.																				
Standrod	Boxelder	.....	6	65.0	.....	89	19	40	24†	38	0.06	.....	0.06	0	1	29	2	0	nw.	T. B. Jones.
Idaho.																				
Albion	Cassia	4,650	10	63.4	− 3.9	97	17	29	25	56	T.	− 0.41	T.	0	0	29	2	0	w.	G. A. Axline.
Almo	....do		3								0.02	.....	0.02	0	1	25	5	1	s.	William D. Cahoon.
Alpha	Boise		1																	J. W. King.
American Falls	Oneida	4,341	20	62.2	− 6.1	94	14	26	23†	61	T.	− 0.44	T.	0	0	28	0	3	w.	Harry W. Hall.
Blackfoot	Bingham	4,503	16	62.7	− 3.9	93	17†	30	25	53	T.	− 0.67	T.	0	0	27	4	0	sw.	E. A. Dowd.
Blackfoot Dam	Bannock	6,200	2	63.6	.....	91	17†	36	4†	43	0.00	.....	0	0	0	23	7	1	w.	N. W. Irsfield.
Bogus Creek	Boise	4,200	3								T.	.....	T.	0	0	27	4	0	.....	F. P. Ingraham.
Boise	Ada	2,739	26	69.5	− 2.3	94	18	49	23	38	T.	− 0.16	T.	0	0	24	7	0	nw.	U. S. Weather Bureau.
Bonners Ferry	Bonner	1,850	5	60.9	.....	91	18	34	26	50	2.17	.....	1.33	0	5	13	16	2	sw.	W. H. Heideman.
Boulder Mine	Boise	4,800	2								T.	.....	T.	0	0	29	2	0	.....	Patrick Moriarty.
Buhl	Twin Falls	3,800	5	69.6	.....	102	19	32	20	48	T.	.....	T.	0	0	28	3	0	w.	Hugh Taylor.
Caldwell	Canyon	2,372	7	66.8	.....	92	17†	40	25	48	T.	.....	T.	0	0	21	10	0	w.	Wm. J. Boone, D. D.
Camas	Fremont	4,815	3	64.2	.....	97	18	30	24	53	0.04	.....	0.03	0	2	7	24	0	sw.	Mrs. Edna Faulkner.
Cambridge	Washington	2,651	16	67.8	− 2.9	97	17	37	25	53	0.00	− 0.40	0.00	0	0	31	0	0	w.	Chas. H. Shepherd.
Cedar Creek Dam	Twin Falls		1								0.10	.....	0.10	0	1	24	7	0	nw.	Robert Hoffman.
Chesterfield	Bannock	5,424	15	58.2	− 1.9	96	15	22	25	64	0.00	− 0.99	0.00	0	0	25	6	0	.....	Chas. S. West.
Clyde	Custer		1	59.2	.....	85	18	37	4†	37	T.	.....	T.	0	0	23	8	0	nw.	R. L. Sutcliffe.
Cottonwood Creek	Boise	4,000	2																	Frank Hedrick.
Council	Mesa		1	68.4	.....	96	13	37	27	47	T.	.....	T.	0	0				.....	Dick Ross.
Culdesac	Nez Perce	1,520	3	68.4	.....	103	17	41	31	57	0.10	.....	0.05	0	2	27	3	1	.....	R. R. Richmond.
Deary	Latah		1																	H. P. Heary.
Dent	Clearwater	1,350	5	66.2	.....	103	17	38	23†	57	0.48	.....	0.36	0	3	22	9	0	.....	Emil Schuessler.
Driggs	Fremont	6,097	4	57.2	.....	86	17	28	24†	47	0.16	.....	0.16	0	1	18	7	6	sw.	Walter H. Durrant.
Edie	....do		2	57.4	.....	83	18†	33	25	43	0.68	.....	0.40	0	2	25	6	0	s.	Geo. B. Edie.
Emmett	Canyon	2,350	4																	C. R. Kar.
Forney	Lemhi		14	56.9	− 2.1	89	13	27	24	59	0.27	− 0.35	0.24	0	2	13	10	8	.....	M. B. Merritt.
Garden Valley	Boise	3,600	5								0.00	.....	0.00	0	0	19	11	1	.....	Mrs. Gertrude Ross.
Garnet	Elmore	2,575	12	73.4	− 3.6	102	31	37	16	61	0.00	− 0.08	0.00	0	0	24	6	1	w.	Asa A. Kenison.
Glenns Ferry	....do	2,569	3	70.4	.....	102	17†	36	25	58	0.00	.....	0.00	0	0	31	0	0	w.	I. E. Perkins.
Gooding	Lincoln	3,572	2	65.6	.....	96	31	37	22†	53	0.00	.....	0.00	0	0	29	2	0	w.	John Krall, jr.
Grand Forks	Shoshone	3,000	3	57.1	.....	91	17	31	28	54	0.94	.....	0.20	0	9	18	4	9	w.	Henry Kottkey.
Grandview	Owyhee		2	68.8	.....	98	17†	36	25	55	0.00	.....	0.00	0	0	28	3	0	nw.	N. G. Massey.
Grimes Pass	Boise	5,200	2								T.	.....	T.	0	0					Joseph M. Clarke.
Guffey	Owyhee	2,381	3	73.5	.....	100	31	46	25	46	0.03	.....	0.03	0	1	28	3	0	w.	Fred Perry.
Hailey	Blaine	5,347	9	64.4	− 2.9	92	17†	38	21	48	T.	− 0.14	T.	0	0	16	15	0	ne.	U. S. Forest Service.
Hotspring	Owyhee	2,752	6	71.2	.....	98	31	45	10	46	T.	.....	T.	0	0	29	2	0	.....	J. M. Waterhouse.
Idaho Falls	Bonneville	4,742	18	63.1	− 3.6	93	19	31	25	53	0.07	− 0.65	0.04	0	2	26	3	2	.....	Dr. T. M. Bridges.
Indian Valley	Adams	2,999	3								0.00	.....	0.00	0	0	27	4	0	s.	A. M. Henke.
Irwin	Bonneville	6,500	2																	Eva Johnston.
Kellogg	Shoshone	2,305	7	61.2[b]	.....	92[b]	18	36[b]	24	51[b]	1.48	.....	0.49	0	7	23	1	7	.....	W. McM. Huff.
Kirkham	Boise	4,200	2								0.00	.....	0.00	0	0	20	9	2	w.	Mrs. Josie B. West.
Kooskia	Idaho	1,261	3	67.6	.....	100	18†	38	23†	54	0.70	.....	0.60	0	2	23	7	1	.....	U. S. Forest Service.
Lakeview	Bonner	2,250	13	62.2	− 1.2	88	1	40	22	40	1.19	+ 0.26	0.64	0	3	18	5	8	sw.	E. D. Faust.
Landore	Adams	5,300	7	57.7	.....	86	18	33	27	44	0.38	.....	0.33	0	2	23	8	0	.....	Mrs. Emma L. Brown.
Lewiston	Nez Perce	757	11	71.3	− 2.2	102	17	47	21	47	0.74	+ 0.37	0.60	0	5	20	8	3	e.	U. S. Weather Bureau.
Little Camas	Elmore	5,000	3								0.00	.....	0.00	0	0	21	7	3	w.	Solon McCoy.
Long Gulch	....do	4,500	3								T.	.....	T.	0	0	25	6	0	.....	Mrs. Elizabeth Hjort.
Loon Creek	Custer	6,000	7	54.8	.....	88	17	26	24†	55	0.02	.....	0.01	0	2	13	8	10	sw.	Mrs. Mary Williams.
Mackay	....do	5,897	4	64.4	.....	100	20	40	22	59	0.00	.....	0.00	0	0	26	4	1	nw.	U. S. Forest Service.
Meadows	Adams	3,950																		Chas. A. Hackney.
Meridian	Ada	2,657	1	68.1	.....	96	17	41	22†	49	T.	.....	T.	0	0	23	8	0	nw.	A. W. Garrett.
Mesa[1]	Adams	3,275	2	68.6[c]	.....	95[c]	17	40[c]	15	43[c]	0.00	.....	0.00	0	0	.....	.....	.....	n.	I. S. Carter.

TABLE 1.—*Climatological data for August, 1911. District No. 12*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Idaho—Continued.																				
Middle Fork	Idaho	1,250	2	63.4	.....	96	31	35	21	60	0.32	.....	0.16	0	3	13	18	0	.....	Jos. McGhee.
Milner	Twin Falls	4,110	7	68.0	.....	98	18	43	21†	49	0.00	.....	0.00	0	0	27	3	1	w.	James K. Young.
Moscow	Latah	2,748	20	64.4	− 1.0	96	17	42	9	43	0.76	− 0.03	0.20	0	6	11	14	6	ne.	University of Idaho.
Mountainhome	Elmore	3,150	6	65.6	.....	98	31	33	25	54	0.00	.....	0.00	0	0	27	4	0	nw.	Mrs. Ellen Manion.
Murtaugh	Twin Falls	.....	5	65.6	.....	91[c]	18†	38[d]	25†	50[d]	0.00	.....	0.00	0	0	.....	.....	.....	w.	J. E. Steinour.
Nezperce	Lewis	3,082	2	61.6	.....	92	17	34	21	47	1.00	.....	0.53	0	4	23	4	4	.....	P. Mitchell.
Oakley	Cassia	4,700	18	67.8	− 1.6	99	17	40	21†	48	0.00	− 0.60	0.00	0	0	19	11	1	s.	John Adams.
O'Hara Bar	Idaho	1,400	2	64.4	.....	90	19	40	26†	45	1.09	.....	0.52	0	4	14	13	4	.....	J. D. Agnew.
Orofino	Clearwater	1,027	7	67.4	.....	102	17	42	21†	53	0.59	.....	0.52	0	4	17	14	0	.....	Geo. Alteneder.
Payette	Canyon	2,159	20	69.2	− 3.2	99	18	42	28	51	T.	− 0.21	T.	0	0	25	4	2	n.	E. F. Allen.
Peaceful Valley	do	2,325	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. M. Newton.
Pebble	Bannock	5,277	3	60.2	.....	91	17†	26	25	56	T.	.....	T.	0	0	21	10	0	sw.	Mrs. Fannie Say.
Pierson	Custer	7,000	3	57.8	.....	85	6†	28	2	51	0.00	.....	0.00	0	0	29	1	1	.....	David P. Clarke.
Pleasant Valley	Ada	3,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. E. Freidrick.
Pocatello	Bannock	4,483	12	68.3	− 2.3	94	12	41	27	43	0.01	− 0.55	0.01	0	1	23	8	0	se.	U. S. Weather Bureau.
Pocatello Nursery	do	5,396	5	61.2	.....	94	18	28	23†	57	0.00	.....	0.00	0	0	.....	.....	.....	sw.	Mrs. Anna M. Wrensted.
Poplar	Bonneville	.....	.....	64.4	.....	92	17†	32[d]	15	56	0.00	.....	0.00	0	0	22	7	2	s.	C. M. Lawrence.
Porthill	Bonner	1,665	22	60.8	− 2.9	84	31	37	26	39	1.27	+ 0.32	0.63	0	4	20	5	6	.....	H. A. French.
Pyle Creek	Boise	3,100	2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	30	1	0	w.	P. V. Smith.
Richfield	Lincoln	.....	2	65.8	.....	95	17†	35	21	51	0.00	.....	0.00	0	0	21	10	0	w.	Idaho Irrigation Co.
Roseberry	Boise	.....	1	53.7	.....	86	17†	22	27	.....	0.15	.....	0.15	0	1	.....	.....	.....	.....	Rev. H. F. Barstow.
Roseworth	Twin Falls	.....	2	.....	.....	.....	.....	.....	.....	.....	0.24	.....	0.24	0	1	6	25	0	nw.	D. B. Hartwell.
Rupert	Lincoln	4,204	5	64.9	.....	94	17	39	25†	50	T.	.....	T.	0	0	30	0	1	w.	Will Parry.
St. Maries	Kootenai	2,263	15	62.6	− 1.6	90	17	39	22†	45	0.87	− 0.02	0.30	0	7	15	10	6	nw.	J. S. Turnbull.
Salmon	Lemhi	4,040	6	63.0	.....	93	18	38	24†	47	0.27	.....	0.14	0	4	24	7	0	w.	B. C. Easum.
Salmon River Dam	Twin Falls	.....	4	67.8	.....	95	17	44	21†	42	0.19	.....	0.19	0	1	24	7	0	nw.	Arch M. Gilbert.
Sandpoint	Bonner	2,086	1	60.4	.....	89	31	32	24	51	1.20	.....	0.80	0	6	17	6	8	n.	J. H. Edgerton.
Sheep Hill	Boise	5,000	.....	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	Clifford M. Gardner.
Shoshone	Lincoln	3,968	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. O. Truman.
Silver City	Owyhee	6,280	4	.....	.....	.....	.....	.....	.....	.....	0.02	.....	0.02	0	1	20	10	1	w.	A. D. Bradfield.
Soldier Creek	Blaine	.....	1	60.6[a]	.....	88[a]	17	37[a]	11†	45[a]	0.00	.....	0.00	0	0	.....	.....	.....	nw.	J. E. Minear.
Spirit Lake	Kootenai	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. C. Krause.
Springfield	Bingham	4,420	3	64.9	.....	98	17	30	23	56	T.	.....	T.	0	0	14	17	0	sw.	Mrs. W. A. Edwards.
Sugar	Fremont	.....	4	59.6	.....	90	16	30	24	50	0.03	.....	0.02	0	2	26	3	2	sw.	Utah-Idaho Sugar Co.
Sunnyside	Elmore	.....	2	68.4	.....	97	12	40	25	48	T.	.....	T.	0	0	.....	.....	.....	nw.	E. A. Wilmot.
Tripod Mountain	Boise	4,300	2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	28	2	1	.....	Mrs. Verna Paddock.
Twin Falls	Twin Falls	3,825	6	66.0	.....	97	20	39	25†	52	0.04	.....	0.04	0	1	13	10	8	w.	J. A. Waters.
Vernon	Fremont	.....	14	61.2	− 1.0	90	18	31	21	47	0.08	− 0.42	0.06	0	2	22	7	2	sw.	A. M. Slatery.
Wallace	Shoshone	2,728	4	61.0	.....	92	17	38	26	48	2.70	.....	0.84	0	8	.....	.....	.....	e.	U. S. Weather Bureau.
Wendell	Lincoln	3,400	3	68.5	.....	100	17	37	25	55	0.00	.....	0.00	0	0	26	5	0	w.	C. L. Dingler.
Washington.																				
Aberdeen	Chehalis	162	20	61.2	+ 0.2	89	23	40	17	41	.77	− .29	.59	0	4	12	17	2	w.	C. S. Weatherwax.
Anacortes	Skagit	60	17	60.0	.....	78	17	41	18	35	1.16	+ .29	.76	0	4	25	3	3	.....	Douglas Allmond.
Baker	do	200	5	65.4[b]	.....	89[d]	22	43	20	37[d]	2.73	.....	1.87	0	3	17	6	8	.....	R. M. White.
Bellingham	Whatcom	30	16	60.8	+ 0.2	79	23†	44	17	34	1.70	+ .61	.93	0	5	23	5	3	.....	S. B. Mayhew.
Bellingham, near	do	107	.....	60.4	.....	81	22	41	16	36	1.38	.....	1.09	0	6	14	13	4	.....	U. S. Bur. of Plant Industry.
Beverly	Grant	545	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blaine	Whatcom	57	14	59.6	− 0.4	80	26	40	16	37	1.45	+ .62	.56	0	5	9	19	3	sw.	John W. Sheets.
Blewett	Chelan	2,200	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Burmeister.
Bremerton	Kitsap	30	.....	.....	.....	.....	.....	.....	.....	.....	.07	.....	.06	0	2	.....	.....	.....	.....	U. S. Navy Yard.
Brewster	Okanogan	1,620	1	69.9	.....	94	17†	50	21	37	.41	.....	.17	0	5	19	11	1	sw.	Mrs. H. F. Bertram.
Bumping Lake	Yakima	3,400	.....	57.2	.....	86	18	34	2†	42	.41	.....	.25	T.	3	20	1	10	.....	U. S. Reclamation Service.
Cedar River	King	535	4	.....	.....	.....	.....	.....	.....	.....	.42	.....	.24	0	3	19	4	8	.....	George Landsburg.
Centralia	Lewis	212	18	62.6	− 1.4	90	27	37	16	47	.37	− .44	.37	0	1	14	11	6	w.	I. M. Turner.
Cheney	Spokane	2,351	12	65.4	.....	90	31	42	21	42	.87	.....	.50	0	4	.....	.....	.....	sw.	J. E. Buchanan.
Cle Elum	Kittitas	1,930	12	62.5	+ 0.3	92	17	34	22	53	.73	+ .35	.58	0	3	23	8	0	sw.	J. A. Balmer.
Clearbrook	Whatcom	140	8	60.3	.....	87	26	36	16	47	1.93	.....	.84	0	7	11	6	14	w.	George Gibbs.
Colfax	Whitman	2,300	22	63.8	− 1.6	97	18	34	25	54	.05	− .56	.05	0	1	.....	.....	.....	.....	I. B. Doolittle.
Colville	Stevens	1,635	11	63.2	− 2.5	95	18	36	22†	53	.98	+ .22	.52	0	5	13	11	7	sw.	W. L. Sax.
Conconully	Okanogan	2,300	11	64.2	− 0.4	89	17†	40	23	45	.70	+ .06	.24	0	8	21	4	6	.....	Wm. Baines.
Cowiche	Yakima	1,874	.....	68.2	.....	90	31	46	20	32	.44	.....	.43	0	2	17	13	1	nw.	U. S. Reclamation Service.
Crescent	Lincoln	2,250	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Otto Wollweber.
Davenport	do	2,450	2	64.8[c]	.....	88[b]	18†	44[b]	8	37[b]	1.71	.....	.64	0	4	20	3	6	.....	James L. Thayer.
Dayton	Columbia	1,700	25	66.8	− 1.6	91	17†	45	9	40	.07	− .42	.07	0	1	21	10	0	.....	W. W. Hendron.
Deer Park	Spokane	2,050	.....	61.6	.....	92	31	34	24	56	1.23	.....	.81	0	2	18	7	6	sw.	James Mills.
Detroit	Mason	30	3	63.0	.....	91	24	41	16	45	.14	.....	.07	0	2	17	9	5	s.	Walter O. Ecker
Dixie	Walla Walla	5,000	2	.....	.....	.....	.....	.....	.....	.....	.03	.....	.03	0	1	16	9	6	sw.	T. Z. Andrews.
Dryden	Chelan	960	.....	.....	.....	.....	.....	.....	.....	.....	.17	.....	.07	0	4	24	6	1	nw.	Valley Power Co.
Duckabush	Jefferson	380	3	61.5[b]	.....	85[b]	22†	40[b]	16	41[b]	.07	.....	.05	0	2	14[b]	6[b]	9[b]	sw.	E. G. Newman.
East Sound	San Juan	500	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. E. Harrison.
Ellensburg	Kittitas	1,571	23	64.6	− 1.1	94	17	37	21	54	.20	− .08	.20	0	1	19	8	4	nw.	R. Lee Barnes.
Ephrata	Grant	1,265	8	74.0	.....	95	28	53	21	34	1.65	.....	1.20	0	2	12	17	2	sw.	T. J. Cook.
Forks	Clallam	480	2	.....	.....	.....	.....	.....	.....	.....	.56	.....	.41	0	3	11	9	11	w.	R. H. Palmer.
Fort Simcoe	Yakima	1,427	17	68.2	− 4.5	95	18	43	19	47	.03	− .18	.03	0	1	22	9	0	s.	Dr. F. H. Monk.
Gerome	Stevens	.....	.....	64.4	.....	90	15†	44	24†	40	.81	.....	.49	0	5	15	14	2	sw.	J. H. C. Scurlock.
Goat Lake	Snohomish	2,900	2	.....	.....	.....	.....	.....	.....	.....	1.20	.....	.80	0	5	.....	.....	.....	.....	C. M. Mackintosh.
Gold Basin	do	1,360	.....	59.9	.....	82	24	39	16	40	1.14	.....	.80	0	6	.....	.....	.....	sw.	U. S. Forest Service.
Gold Creek	Yakima	2,600	2	.....	.....	.....	.....	.....	.....	.....	.25	.....	.10	0	3	24	0	7	w.	U. S. Reclamation Service.
Goldendale	Klickitat	1,600	5	66.3	.....	90	10†	41	9	46	T.	− .28	T.	0	0	12	19	0	w.	Klickitat County Abstract Co.
Granite Falls	Snohomish	397	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Cleaver.
Grays River	Wahkiakum	2,200	1	.....	.....	.....	.....	.....	.....	.....	1.42	.....	.98	0	5	16	7	8	nw.	A. B. Martin.
Hatton	Adams	1,100	6	69.4	.....	100	17	43	20†	47	.26	.....	.12	0	4	15	10	6	sw.	Dr. A. V. Marion.
Huntsville	Columbia	1,400	3	.....	.....	.....	.....	.....	.....	.....	.14	.....	.14	0	1	.....	.....	.....	.....	Mrs. S. J. Hill.
Irene Mountain	Okanogan	3,015	2	.....	.....	.....	.....	.....	.....	.....	1.36	.....	.68	0	8	7	17	7	nw.	Mrs. Manda S. Shain.
Kennewick	Benton	368	16	74.2	− 1.0	104	17	42	9	49	.54	+ .33	.20	0	4	.....	.....	.....	.....	R. E. Reed.
Kettle Falls	Stevens	1,265	2	66.1	.....	95	17†	41	26†	48	1.33	.....	.44	0	6	17	13	1	.....	Harry H. Cole.
Kiona	Benton	430	6	70.8	.....	96	17	45	21†	45	.09	.....	.05	0	2	28	2	1	sw.	Dr. F. S. Hedger.
Kosmos	Lewis	775	5	61.8	.....	92	24	38	17†	52	.38	.....	.21	0	3	3	25	3	ne.	J. A. Ulsh.
La Center	Clarke	250	14	60.6	− 3.9	89	27	37	16	46	.53	− .61	.53	0	1	18	11	2	nw.	Joseph Brothers.
La Crosse	Whitman	1,400	2	65.4	.....	97	17	36	24	51	.09	.....	.08	0	2	20	10	1	w.	M. E. Schreck.
Lake Clealum	Kittitas	2,171	2	.....	.....	.....	.....	.....	.....	.....	.30	.....	.14	0	3	13	9	9	nw.	U. S. Reclamation Service.
Lake Kachess	do	2,235	3	62.2	.....	86	16	40	8	45	.24	.....	.15	T.	2	20	9	2	e.	Do.
Lake Keechelus	do	2,479	3	.....	.....	.....	.....	.....	.....	.....	.15	.....	.15	0	1	23	4	4	w.	Do.

TABLE 1.—*Climatological data for August, 1911. District No. 12*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Washington—Contd.																				
Lakeside	Chelan	1,116	20	71.0	− 1.5	94	18	53	5†	38	.60	+ .23	.24	0	5	8	23	0	w.	W. H. Van Meter.
Laurel	Klickitat	1,900	2								.05		.03	0	2	18	13	0	w.	Mrs. Minnie E. Strout.
Laurier	Ferry	1,644	1	66.1		97	18	40	22†	51	1.01		.45	0	7	9	10	12	sw.	Mrs. J. S. Myers.
Lester	King	1,614	7																	
Lone Tree	Chehalis	14	2	58.8		78	23	48	29	24	.45		.32	0	6	11	8	12	nw.	U. S. Engineer Corps.
Longmires Springs	Pierce	2,800	2																	U. S. Forest Service.
Lost Creek	Okanogan	3,125	2																	
Lucerne	Chelan	1,100	4								1.78		.74	0	8	12	14	5	s.	P. H. Leese.
McConihe	Grant	1,072		71.0		97	17	47	25	44	.57		.30	0	3	17	8	6	n.	Mrs. Barbara Schearer.
McCumbers Ranch	Yakima	2,182	2								0		0	0	0	13	8	0	sw.	Paul McConihe.
Moses Lake	Grant										.32		.18	0	4	26[a]	0[a]	4[a]		Mrs. Mary McCumber.
Mottinger	Benton	307	11	74.4	− 0.4	100	17	52	23	40	.38	+ .16	.38	0	1	29	1	1	w.	C. C. Ward.
Mount Pleasant	Clallam	500		58.7		81	26	41*	10	28	.76		.57	0	3	19	2	10	nw.	G. H. Mottinger.
Moxee	Yakima	1,000	19	69.8	0	97	17	41	27	52	.02	− .18	.02	0	1	24	4	3		Wm. M. Dorr.
Newport	Stevens	2,400	1	61.1		91	18	33	24	55	1.67		.51	0	6	16	10	5	sw.	H. B. Scudder.
North Head	Pacific	211	9	57.5	− 0.4	75	22	51	27	17	0.23	− .33	.11	0	4	10	7	14	nw.	Chas. M. Talmadge.
Northport	Stevens	1,350	12	64.9		96	18	40	7†	46	.93	− .29	.44	0	6	21	3	7		U. S. Weather Bureau.
North Yakima	Yakima	1,070	2	70.4		92	17	45	20	38	.21		.11	0	2	23	6	2	nw.	W. F. Case.
Nutland	Klickitat		2	72.1		94	31	48	21	38	0		0	0	0					Albert Bender.
Odessa	Lincoln	1,540	8	65.2		95	17	49	24	48	.50		.35	0	2	6	20	5	sw.	Ruth J. Shepard.
Olga	San Juan	50	21	59.4	+ 0.2	76	23†	47	14	23	1.17	+ .28	.93	0	4	17	10	4	se.	Wm. U. Neeley.
Olympia	Thurston	200	33	62.1	− 0.6	89	27	38	16	46	0.22	− .44	.18	0	2	19	3	9	nw.	Cecil S. Willis.
Omak	Okanogan	850	2	70.0		100	17†	44	21†	50	.73		.56	0	4	18	2	11	n.	M. O'Connor.
Oroville	do	922	2	73.5		100	18	46	24†	48	.83		.26	0	6	16	14	1	n.	St. John Umbrite.
Parker	Yakima																			Elizabeth M. Slansbury.
Peola	Garfield	5,000	2								.68		.52	0	5	23	8	0	nw.	Samuel Gruell, sr.
Pomeroy	do	1,500	19	66.8	− 4.7	98	17	42	23†	48	T.	− .52	T.	0	0	13	17	1	w.	Peter McClung.
Port Crescent	Clallam	259	16	55.2	− 1.0	83	26	40	16	37	.42	− .28	.42	0	1	7	20	4	w.	U. S. Weather Bureau.
Port Townsend	Jefferson	80	21	60.0	− 0.9	81	26	47	16†	31	.84	+ .04	.29	0	4	16	7	8	nw.	Frank Plummer.
Pullman	Whitman	2,550	19	65.8	− 1.0	97	17	44	21	46	.43	− .30	.18	0	5	21	10	0	sw.	State Agricultural College.
Queets River	Chehalis			60.6[b]		86[b]	21	40[b]	18†	44[b]	.87		.38	0	9	24[a]	0[a]	6[a]	w.	C. A. Bullard.
Quiniault	do	300	4	64.5		92	23†	40	22	50	.65		.47	0	4	14	12	5	w.	A. V. Higley.
Republic	Ferry	2,628	11	61.0	− 2.2	92	18	34	27	52	.84		.34	0	8	17	4	10	nw.	G. B. Stocking.
Rex Creek	Chelan	1,135	4	68.8[l]		92[l]	23	50[k]	23	42[l]	.19		.12	0	3	2[k]	12[k]	6[k]	nw.	J. W. Nicol.
Ritsville	Adams	1,825	12								.55	+ .26	.24	0	3					Agent Northern Pacific Ry.
Robertsville	Klickitat			62.8[h]		91[h]	30	38[h]	21	48[h]						17[h]	6[h]	0[h]		R. B. Conger.
Rock Lake	Whitman	1,910	5	68.0[c]		92	17†	46	5	41[c]	1.07		.36	0	5	20	6	5	sw.	P. M. Ramsey.
Rosalia	do	2,425	19	64.8	− 0.3	89	17†	42	21	38	1.37	+ .65	.58	0	6	22	5	4	sw.	Hans Mumm.
Russels Ranch	Yakima	2,870	2								.06		.05	0	1	20	10	1	w.	Miss Maggie M. Russell.
Seattle	King	123	20	62.6	− 0.5	81	24	50	10	27	.13	− .36	.13	0	2	12	9	10	n.	U. S. Weather Bureau.
Sedro Woolley	Skagit	38	14	61.0	− 0.5	83	22†	41	5	38	2.96	+ 1.39	1.97	0	4	21	7	3		Mrs. H. L. Devin.
Sixprong	Klickitat	1,240	4	73.3		96	17†	42	19	39	.01		.01	0	1	26	4	1	sw.	C. E. Comstock.
Skagit Power Dam	Whatcom	510	1	67.0		92	16	46	16†	46	1.63		.81	0	9	20	5	6		Skagit Power Co.
Snohomish	Snohomish	100	17	61.7	− 0.6	87	23†	40	25	45	.69	− .40	.47	0	4	18	4	9	nw.	Warren Hodge.
Snoqualmie Falls	King	667	12	63.8		86	22†	41	16	40	.60	− .92	.50	0	2	18	6	7		O. N. Wiswell.
Snyder's ranch	Okanogan	2,200	2	61.7		98	30	34	14	51	.28		.15	0	5	19	12	0	w.	G. M. Snyder.
South Bend	Pacific		16	59.4	− 2.1	88	22†	42	16†	39	.63	− .84	.26	0	13	12	7	12	w.	Mrs. W. E. Buckingham.
Spokane	Spokane	1,943	30	66.2	− 1.7	91	31	47	24	37	1.16	+ .68	.52	0	6	13	12	6	ne.	U. S. Weather Bureau.
State University	King	170	2	59.9		80	22†	44	21	28	.12		.06	0	3	15	4	12	w.	University of Washington.
Stokes's ranch	Okanogan	2,670	2								.72		.26	0	8	17	12	2	nw.	Charles W. Gunn.
Sullivan Lake	Stevens	2,700																		U. S. Forest Service.
Sumner	Pierce	77	3	58.6[a]		85[a]	24†	34[a]	16	45[a]	.15		.08	0	2	15	4	12	w.	H. E. Thompson.
Sunnyside	Yakima	740	16	68.3	− 1.7	95	17†	42	7	47	.08	− .14	.06	0	2	16	15	0	nw.	U. S. Reclamation Service.
Tacoma	Pierce	213	25	62.1	− 0.9	82	27	47	16	28	.17	− .53	.17	0	2	8	6	17	n.	U. S. Weather Bureau.
Tatoosh Island	Clallam	86	26	53.5	− 1.8	68	26	47	21	19	.35	− 1.76	.17	0	8	7	5	19	s.	Do.
Tieton	Yakima	2,000	2	63.2		91	31	39	21	44	1.22		1.05	0	3	19	12	0	w.	U. S. Reclamation Service.
Tonasket	Okanogan	945		71.3		98	18	50	5†	38	.38		.20	0	2	15	5	11	n.	E. H. Twight.
Touchet	Walla Walla	556	4	68.9		97	17	40	24†	51	.27		.27	0	1	25	6	0	sw.	D. W. Dorrance.
Touchet Ridge	Columbia	2,500	2								.10		.10	0	1	19	12	0	sw.	R. H. King.
Trinidad	Douglas	900	7	74.8		97	17†	52	20	36	.17		.12	0	2	28	3	0	nw.	J. C. Wheeler.
Vancouver	Clarke	100	36	66.8	+ 0.6	92	27	46	16†	42	.76	+ .15	.52	0	2	16	12	3	nw.	A. A. Quarnberg.
Vashon Island	King	40	22	59.2[d]	− 3.8	75[f]	27	42	25	28[f]	.12	− .46	.06	0	2	15	7	9	n.	Miss Gertrude McClintock.
Wahluke	Grant	410	7	73.4		99	17	51	20†	42	1.15		.50	0	5	21	7	3		F. C. Koppen.
Wallace	Okanogan	4,000	2								.96		.32	0	9	12	13	6	s.	G. A. Wallace.
Walla Walla	Walla Walla	1,000	2	73.0	− 0.8	95	31	54	26	33	.02	− .43	.02	0	1	27	4	0	s.	U. S. Weather Bureau.
Washougal	Skamania	650	11	64.6	− 0.4	88	24	45	16	36	.46	− .59	.23	0	2	18	9	4	w.	F. M. Grout.
Waterville	Douglas	2,624	21	65.0	− 1.6	92	18	39	26	46	1.46	+ .99	.50	0	7	20	10	1		O. R. Hopewell.
Wenatchee, near	Chelan	1,169	12	68.0	+ 0.3	89	17†	49	21	30	.48	+ .14	.28	0	5	15	16	0	w.	George A. Pitcher.
White Salmon	Klickitat	325		67.6		94	27	47	21	44	.10		.05	0	3	26	4	1	w.	C. W. J. Rickers.
Wilbur	Lincoln	2,203	12	64.6	+ 0.7	95	17†	34	26	55	.69	+ .19	.28	0	4	16	8	7	sw.	R. J. Reeves.
Wind River	Skamania	1,300		61.4[b]		90[c]	27†	40	8	45[c]	.30		.20	0	2	18	4	9	w.	U. S. Forest Service.
Winthrop	Okanogan	1,765				96	17				1.07		.49	0	7	15	10	6		Methow Trading Co.
Yale	Cowlitz	375	4	63.6		90	24†	41	8†	38	.25		.16	0	2	20	7	4	sw.	L. F. Williams.
Zillah	Yakima	800		68.6		95	30	41	22	45	T.		T.	0	0	27	4	0	w.	Clarence G. Ware.
Zindel	Asotin	715	9	74.3		101	30	51	23†	46	1.39		.91	0	3	12	13	6	n.	M. W. Zindel.
Oregon.																				
Albany	Linn	212	30	65.2	− 0.8	93	22†	42	16	44	T.	− 0.49	T.	0	0	15	5	11	n.	F. M. French.
Ashland	Jackson	1,963	28	68.2	− 0.8	91	22†	46	16†	38	0	− 0.37	0	0	0	15	16	0	nw.	G. G. Eubanks.
Astoria	Clatsop	16	51	60.8	− 0.8	85	22	48	29	31	0.72	− 0.38	0.22	0	8	15	5	11	nw.	Irving Club.
Baker	Baker	3,466	21	63.1	− 1.8	91	17	41	29	41	0.12	− 0.27	0.09	0	2	22	9	0	nw.	U. S. Weather Bureau.
Bay City	Tillamook	14	17	59.0		85	27	41	16†	43	0.47		0.25	0	5	15	9	7	nw.	John O. Bozorth.
Beech Creek	Grant	4,500		58.5		86	31	32	20	49	0.18		0.18	0	1	25	6	0	w.	G. G. Carson.
Bend	Crook	3,629	29	59.7		88	30	31	20	51	0.78		0.67	0	2	31	0	0	w.	Bend Bulletin.
Black Butte	Lane	1,200	10	58.2		84	23	38	7	37	0		0	0	0	26	4	1	nw.	Wm. Harris.
Blalock	Gilliam	237	13	77.4		104	19	53	21	38	0		0	0	0	25	6	0	w.	Geo. W. Long.
Brogan	Malheur	2,600		74.5		98	18	50	4	41	0		0	0	0	31	0	0	w.	A. B. Cox.
Burns	Harney	4,157	20																	J. C. Welcome, jr.
Cascade Locks	Hood River	100	21	66.6	− 1.2	91	27	47	16	38	0.35	− 0.53	0.26	0	3	26	1	4	w.	Val. W. Tomkins.
Cazadero	Clackamas	503	2	64.8		92	22	42	20†	46	0.24		0.10	0	4	18	8	5	nw.	Alf Drill.
Cliff	Lake	4,300	4	57.0		90	30	24	20	58	0.18		0.15	0	2	20	9	2	n.	John C. Green.
Condon	Gilliam	2,884	4	66.7		95	3	45	27	43	0.03		0.03	0	1	27	2	2	nw.	C. H. Williams.
Corvallis	Benton	266	23	67.5	+ 2.4	92	22†	45	18	40	0.02	− 0.40	0.02	0	1	27	3	1	n.	Oregon Agricultural College.
Crescent	Klamath			63.3		89[a]	30	36[a]	20	41[a]	0.28		0.25	0	2	25	2	4	n.	A. M. Caisse.
Dayville	Grant	2,200	17	64.8	− 2.2	93	31	37	24	52	T.	− 0.34	T.	0	0	27	4	0	nw.	Dr. J. Campbell-Martin.

TABLE 1.—*Climatological data for August, 1911. District No. 12*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon—Continued.																				
Deadwood	Lane	350	1	63.2	.....	92	22†	43	16	44	0.17	.....	0.17	0	1	20	7	4	nw.	Jos. Slemmons.
Doraville	Columbia	600	10	61.6	− 0.3	86	23	44	16	34	0.38	− 0.44	0.25	0	8	13	6	12	nw.	Jos. Hackenberg.
Drain	Douglas	300	9	64.8	.....	94	22	38	16	51	0	.....	0	0	0	21	8	2	nw.	Ira Wimberly.
Echo	Umatilla	625	7	71.2	.....	98	17	45	22†	47	0.11	.....	0.09	0	2	28	2	1	w.	R. B. Stanfield.
Ella	Morrow	830	7	73.4	.....	97	17	46	21	42	0	− 0.28	0	0	0	26	4	1	sw.	Carl F. Troedson.
Eugene	Lane	449	21	64.6	− 0.3	90	23	43	12	40	0	− 0.62	0	0	0	13	16	2	nw.	F. L. Barker.
Fairview	Coos	142	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Bettys.
Falls City	Polk	355	14	63.2	.....	91	27	39	16	45	0	.....	0	0	0	22	5	4	e.	Chas. F. Vick.
Forest Grove	Washington	220	22	65.8	− 0.1	92	23	42	6†	44	0.60	+ 0.04	0.60	0	1	3	25	3	nw.	Pacific University.
Gardiner	Douglas	72	21	61.2	+ 0.1	85	21	46	28†	34	0.30	− 0.55	0.30	0	1	16	7	7	.....	J. S. Gray.
Glendale	....do	1,441	7	60.8	.....	88	17	36	20	47	0	.....	0	0	0	31	0	0	nw.	B. J. Simpson.
Glenora	Tillamook	575	20	61.8	− 1.3	91	26	37	16	49	0.79	+ 0.43	0.58	0	2	24	1	6	nw.	Mrs. Jennie A. Reeher.
Gold Beach	Curry	40	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Granite	Grant	4,680	6	66.5	.....	83	30	27	24	56	T.	.....	T.	0	0	12	19	0	nw.	L. N. Ford.
Grants Pass	Josephine	956	23	67.1	− 1.5	99	22	39	20	55	0	− 0.30	0	0	0	31	0	0	sw.	John B. Paddock.
Grass Valley	Sherman	2,381	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent, O. W. R. & N. Co.
Headworks	Clackamas	719	9	64.4	.....	94	26	37	29	47	0.53	− 1.32	0.28	0	4	20	10	1	ne.	Portland Water Works.
Heppner	Morrow	1,950	21	66.2	− 1.9	92	31	40	27	48	0.22	− 0.05	0.13	0	2	22	9	0	nw.	Ralph M. Kenton.
Hermiston	Umatilla	451	5	72.4	.....	97	31	42	27	50	0.52	.....	0.52	0	1	21	10	0	.....	C. W. Kellogg.
Hermoso Rio	Crook	2,300	...	63.0	.....	90	30†	32	16	54	0.16	.....	0.06	0	3	28	2	1	se.	Carl T. Hubbard.
Hood River	Hood River	300	21	65.2	− 1.3	94	28	42	31	48	0	− 0.25	0	0	0	31	0	0	w.	H. L. Hasbrouck.
Huntington	Baker	2,165	10	76.6	.....	98	17	52	24	39	0	− 0.23	0	0	0	27	4	0	e.	L. Connell.
Jacksonville	Jackson	1,640	23	68.7	− 1.0	96	24	36	31	54	0	− 0.44	0	0	0	29	2	0	n.	E. Britt.
Joseph	Wallowa	4,400	22	61.8	− 0.2	93	17	38	20	40	0.65	− 0.10	0.50	0	4	19	9	3	s.	F. F. McCully.
Kerby	Josephine	.....	...	67.1	.....	100	22	38	20	55	0	.....	0	0	0	31	0	0	s.	C. T. Canfield.
Klamath Agency	Klamath	4,169	3	55.4	.....	91	29	24	25	66	0	.....	0	0	0	29	2	0	nw.	Edson C. Watson.
Klamath Falls	....do	4,100	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. H. Heileman.
La Grande	Union	2,784	24	66.1	− 2.0	95	31	38	24†	51	0.33	− 0.20	0.33	0	1	25	5	1	nw.	W. A. Worstell.
Lakeview	Lake	4,825	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bert Rice.
McKenzie Bridge	Lane	1,400	10	62.6	− 0.4	97	22	32	21	62	0.05	− 0.78	0.05	0	1	29	0	2	sw.	Geo. Frissell.
McMinnville	Yamhill	182	24	69.6	.....	94	23†	46	29	43	0.15	− 0.41	0.15	0	1	19	7	5	n.	J. H. Pruett.
Marshfield	Coos	34	10	58.8	.....	79	22	42	16	31	0.23	.....	0.06	0	7	.....	.....	.....	nw.	U. S. Weather Bureau.
Medford	Jackson	.....	...	69.6	.....	97	22†	44	20†	51	T.	.....	T.	0	0	29	2	0	nw.	Do.
Merrill	Klamath	4,070	5	61.0	.....	89[a]	28	34[a]	18	47[a]	0	.....	0	0	0	29[a]	1[a]	0[a]	.....	Mrs. Agnes Ritchson.
Metolius	Crook	.....	...	65.0	.....	91	31	36	8	45	0.17	.....	0.17	0	1	28	1	2	.....	W. E. Lottman.
Mikkalo	Gilliam	1,400	5	68.9	.....	92	31	43	21	39	0	.....	0	0	0	30	1	0	w.	Frank Little.
Miramonte Farm	Clackamas	195	23	65.2	+ 0.2	91	23†	40	9	40	0.09	− 0.42	0.09	0	1	22	6	3	n.	G. Muecke.
Monroe	Benton	350	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. A. Peek.
Mount Angel	Marion	485	25	66.8	− 0.7	89	23	49	16†	36	0.06	− 0.45	0.04	0	2	22	7	2	sw.	Dr. Urban Fisher.
Mount Hood	Hood River	1,650	1	64.2	.....	88	25	39	12	42	0.08	.....	0.05	0	2	28	3	0	nw.	S. G. Babson.
Musick	Douglas	5,000	2	56.8	.....	79	30	36	20	32	0.10	.....	0.10	0	1	24	2	5	sw.	Alex. Lundberg.
Newport	Lincoln	69	24	58.0	+ 0.5	71	18	45	12†	30	0.37	− 0.43	0.22	0	2	14	10	7	nw.	Wm. Matthews.
Paisley	Lake	4,500	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. C. Woodward.
Paulina	Crook	.....	...	59.4	.....	91	30	28	25	57	0.75	.....	0.75	0	1	18	8	5	nw.	Orrin C. Mills.
Pendleton	Umatilla	1,070	22	68.4	− 1.8	101	31	40	4†	57	0.11	− 0.27	0.06	0	2	25	6	0	sw.	E. F. Averill.
Pilot Rock	....do	1,817	3	70.4	.....	96	31	45	8†	42	0.09	.....	0.09	0	1	29	2	0	nw.	John P. McManus.
Pompeii	Clackamas	3,879	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Coalman.
Portland	Multnomah	57	41	67.0	− 0.1	90	23	51	16	31	0.28	− 0.37	0.15	0	3	13	12	6	nw.	U. S. Weather Bureau.
Port Orford	Curry	80	6	60.0	.....	75	30	45	14†	23	0	.....	0	0	0	26	4	1	n.	J. D. Loucks.
Prairie City	Grant	3,425	...	65.2	.....	97	31	35	27	56	0.12	.....	0.09	0	2	27	4	0	nw.	A. M. F. Kirchheiner.
Prineville	Crook	2,864	15	64.2	+ 1.7	94	2	34	5†	54	0	− 0.28	0	0	0	29	2	0	nw.	Geo. Summers.
Prospect	Jackson	2,800	5	63.0	.....	96	30	33	20	55	0	.....	0	0	0	22	9	0	w.	E. F. Graham.
Ramsey	Wasco	1,350	10	62.3	.....	87	31	38	13	42	0.02	.....	0.02	0	1	30	0	1	w.	Mrs. Iva B. Collins.
Range	Grant	3,500	3	60.2	.....	94	31	31	11	54	0	.....	0	0	0	26	5	0	.....	Mrs. Emma Arbuckle.
Redmond	Crook	.....	...	63.0	.....	90	30	36	21	44	.....	.....	.....	0	...	31	0	0	w.	E. E. Foote.
Richland	Baker	2,350	10	.....	.....	97[k]	17	39[b]	24†	....	T.	.....	T.	0	0	25[a]	4[a]	1[a]	sw.	L. G. Morgan.
Riverside	Malheur	3,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Leah Fairman.
Roseburg	Douglas	510	33	66.5	+ 0.3	93	23	45	16	42	0	− 0.33	0	0	0	21	9	1	n.	U. S. Weather Bureau.
Salem	Marion	120	21	66.8	+ 0.6	89	23†	50	16	35	T.	− 0.43	T.	0	0	17	1	13	sw.	M. P. Baldwin.
Silver Lake	Lake	4,700	14	61.0	+ 0.1	91	9†	31	5†	53	T.	− 0.32	T.	0	0	11	19	1	nw.	L. W. Charles.
Siskiyou	Jackson	4,115	3	61.8	.....	88	30	39	15	39	0	.....	0	0	0	21	10	0	n.	U. S. Weather Bureau.
Sparta	Baker	4,150	20	63.8	− 4.0	93	16	40	3†	40	0.03	− 0.64	0.02	0	2	24	6	1	w.	J. A. Wright.
Stafford	Clackamas	400	15	66.8	+ 0.4	94	24	46	29†	43	0.15	− 0.71	0.15	0	1	.....	.....	.....	ne.	John P. Gage.
The Dalles	Wasco	112	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. L. Brooks.
Toledo	Lincoln	75	21	62.2	+ 1.3	91	22	42	19	42	0.15	− 0.39	0.15	0	1	30	1	0	nw.	C. B. Crosno.
Umatilla	Umatilla	340	23	73.9	+ 0.2	98	17	50	25†	44	0.18	− 0.12	0.18	0	1	25	3	3	sw.	Mrs. Helen T. Duncan.
Vale	Malheur	2,242	19	68.8	− 0.2	101	17	37	25	57	0.04	− 0.22	0.04	0	1	31	0	0	nw.	H. P. Osborne.
Van	Harney	3,506	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. Howe.
Wallace Orchard	Polk	170	2	69.9	.....	92	24	51	14	39	T.	.....	T.	0	0	7	22	2	.....	Chas. A. Park.
Wallowa	Wallowa	2,935	8	60.6[b]	.....	95[b]	17	31[b]	24†	55[b]	0.22	.....	0.15	0	2	7[b]	14[b]	8[b]	nw.	L. J. Coverstone.
Wamic	Wasco	1,500	10	64.4[g]	.....	94[g]	25	35[g]	8	55[g]	T.	.....	T.	0	0	10[g]	1[g]	13[g]	w.	A. J. Swift.
Warmspring	Crook	1,500	9	64.9	.....	93	26†	39	7	52	0.30	.....	0.30	0	1	31	0	0	nw.	Claude C. Covey.
Wasco	Sherman	1,263	4	.....	.....	92	31	.....	.....	.....	0.03	.....	0.03	0	1	29	2	0	w.	J. R. Howell.
Westfall	Malheur	3,000	...	69.6	.....	99	19	36	4	50	0.11	.....	0.08	0	3	18	10	3	w.	H. M. Gilliam.
Weston	Umatilla	1,800	19	67.2	− 1.1	92	31	42	24	45	T.	− 0.64	T.	0	0	12	12	7	sw.	M. A. Baker.
Williams	Josephine	1,368	19	.....	.....	98	23	.....	.....	.....	0	− 0.28	0	0	0	31	0	0	n.	Francis J. LeRoy.
Yonna	Klamath	4,146	4	59.4	.....	92	30	29	16	51	0	.....	0	0	0	20	11	0	w.	Jacob Ruecke.

[a], [b], etc., indicate respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow

TABLE 2.—*Daily precipitation for August, 1911. District No. 12, Columbia Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Montana.																																	
Anaconda	Missoula	.14	.11	.65	.32	.19	.27	T.		T.			T.		T.								.01	.09		.05							1.83
Butte	do	.40		.40	T.	.10	.30	T.		.40														.10		T.						T.	1.70
Columbia Falls	Flathead		.03		.22		.11	1.02		.02					.06						.06					.26							1.78
Como	Bitter Root	.53	.18		.30	.05	.16																	.04									1.26
East Anaconda ‖	Missoula	.17	T.	.52	.20	.10	.34	T.		T.													.03	.07		.03							1.46
Fortine	Kootenai	T.	.04	.05	.07	T.	.28	.70	.09	.07		.04										.01				.01							1.36
Hamilton	Bitter Root		.70	.08	.21	.23		.30																.10									1.62
Hat Creek	Missoula	.40	.80	.15	.19	.02	.03	.09		.33				.01	T.												.11					T.	2.13
Kalispell	Flathead	.02	.13		.78		.11	.22		.02					.08	T.					.02					.06	T.						1.44
Libby	Kootenai																																
Lost Creek	Missoula				.88	.20	.30																			.30							1.68
McGinnis Meadows	Kootenai																																
Missoula	Missoula	.01	.01		T.	.24	T.	.15		.02																	T.						0.43
Ophir	do	.24	.40	.20	.48		.30	.20		.42																	.20						2.44
Ovando	do	.02	.15	.17	.21	.02	.03	.09														T.			T.			.49					1.18
Philipsburg	do																																
Plains	Columbia	T.	T.	.30		.80	.28	T.																									1.38
Pleasant Valley	Kootenai	.33	.30	.01	.40	.02	.08	.30	.04	.03		.03			T.	T.					.11					.07							1.72
Polson	Flathead		.07			.30	.06	.09	.08	.02					.10									.20		.06							0.98
Proctor	do	.50	.70	.20	.30		.10	.15	.15	.10						.10										T.							2.30
St. Ignatius	do	.02	.09		.20	.17	.21	.06		.03					T.	.05	T.				.05					T.	.31						1.19
St. Regis	Missoula		.58	.01		.21	.67	.08																									1.55
Saltese	do	1.33					.35	.12													.15												1.95
Thompson Falls ‖	Columbia		.46	.05	.02	.10	.11	.27	.02		.13	T.	T.			.02	.02				.05	T.		.04			.04						1.33
Willow Glen Stock Farm. ‖	Missoula		.40	.62	.03	.30	.13																	.02		.01							1.51
Wyoming.																																	
Afton	Snake											.03																					0.00
Alta	do		.18																														0.21
Bedford	do																																0.00
Bechler River	do		.45	.08		.01							.01											.06	.01								0.62
Moran	do																																
Snake River	do	T.	.20	.10	.10		T.						T.											T.	T.								0.40
Nevada.																																	
San Jacinto	Snake																																0.00
Utah.																																	
Standrod	Raft			T.		.06																											0.06
Idaho.																																	
Albion	Snake					T.																										T.	T.
Alpha	Payette																																
Almo	Snake					.02																									T.		0.02
American Falls	do																															T.	T.
Blackfoot ‖	Blackfoot		T.	T.	T.	T.																											T.
Blackfoot Dam	do																																0.00
Bogus Creek	Payette			T.		T.																											T.
Boise	Boise					T.																											T.
Bonners Ferry	Kootenai	.15	.27		.05		.37	1.33													T.					T.							2.17
Boulder Mine	Boise																															T.	T.
Buhl	Snake					T.																										T.	T.
Caldwell	Boise					T.																											T.
Camas	Lost R. Reg.				.03																	T.				.01							0.04
Cambridge	Weiser																																0.00
Cedar Creek Dam	Snake					.10																											0.10
Chesterfield	Port Neuf																																0.00
Clyde	Lost R. Reg.			T.	T.	T.	T.																									T.	T.
Cottonwood Creek	Boise																																
Council	Weiser																															T.	T.
Culdesac	Clearwater	.05	.05																														0.10
Deary	do																																
Dent	do	.01	.11		T.	.36	T.																										0.48
Driggs	Snake		.16																														0.16
Edie	Lost R. Reg.			.40	.28	T.	T.																	T.								T.	0.68
Emmet	Payette																																
Forney	Salmon		.24		.03																												0.27
Garden Valley	Payette																																0.00
Garnet	Snake																																0.00
Glenns Ferry	do																																0.00
Gooding	Wood-Malad																																0.00
Grand Forks	St. Joe	.14	.05		.06	.05	.20	.17		.05						.06					.16												0.94
Grand View	Snake																																0.00
Grimes Pass	Boise	T.		T.																												T.	T.
Guffey	Snake					.03																											0.03
Hailey	Wood-Malad					T.																											T.
Hot Spring	Bruneau					T.																											T.
Idaho Falls	Snake				.03	.04																											0.07
Indian Valley ‖	Weiser																																0.00
Irwin	Snake																																
Kellogg ‖	C. d'Alene		.49				.19	.49	.20			.02									.03	.06											1.48
Kirkham	Payette																																0.00
Kooskia	Clearwater		.10			.60																											0.70
Lakeview	P. d'Oreille			T.	.40		.15	.64	T.												T.												1.19
Landore	Snake	T.	T.	.05	T.		.33																										0.38
Lewiston	Clearwater	.01		.05	.60		T.							T.						.05	.03												0.74
Little Camas	Boise																																0.00
Long Gulch	do																															T.	T.
Loon Creek	Salmon		.01	.01			T.																										0.02
Mackay	Lost R. Reg.																																0.00
Meadows	Salmon																																
Meridian	Boise		T.			T.																											T.
Mesa ‖	Weiser																																0.00
Middle Fork	Clearwater		.10			.16	.06																										0.32
Milner	Snake																																0.00
Moscow	Palouse	.08	.20		.14	.12	.12	.10																									0.76

TABLE 2.—*Daily precipitation for August, 1911. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Idaho—Continued.																																	
Mountain Home	Snake																																0.00
Murtaugh ‖	do																																0.00
Nezperce	Clearwater	.18			.27		.53																									.02	1.00
Oakley	Snake																																0.00
O'Hara Bar	Clearwater		.28			.52	.26	.03																								T.	1.09
Orofino	do	T.	.03	T.	.03	.52	.01																										0.59
Payette	Payette		T.			T.																											T.
Peaceful Valley	Snake																																
Pebble	Port Neuf			T.		T.																											T.
Pierson	Salmon																																0.00
Pleasant Valley	Boise																																
Pocatello	Port Neuf					.01																											0.01
Pocatello Nursery	do																																0.00
Poplar	Snake																																0.00
Porthill	Kootenai					.19	.35	.63	.10																	T.							1.27
Pyle Creek	Payette																																0.00
Richfield	Wood-Malad																																0.00
Roseberry	Payette	.15																															0.15
Roseworth	Snake					.24																											0.24
Rupert	do					T.																											T.
St. Maries	St. Joe	.24		.02	.20	.03	.30	.05													.03		T.										0.87
Salmon	Salmon	.07	.14	.05			.01																										0.27
Salmon River Dam	Snake			T.		.19																										T.	0.19
Sandpoint	P. d'Oreille	T.			.11	.17		.80	.05	.02											.05												1.20
Sheep Hill	Boise																																0.00
Shoshone	Wood-Malad																																
Silver City	Owyhee						.02																										0.02
Soldier Creek	Wood-Malad																																0.00
Spirit Lake	P. d'Oreille																																
Springfield	Snake			T.	T.																												T.
Sugar ‖	do	.02		.01																													0.03
Sunnyside	do																															T.	T.
Tripod Mountain	Payette																																0.00
Twin Falls	Snake					.04																											0.04
Vernon	do					.06																		.02									0.08
Wallace	C. d'Alene	.84	.02	T.	.13	.26	.42	.65								T.					.37						.01						2.70
Wendell	Wood-Malad																																0.00
Washington.																																	
Aberdeen	Coast						.09	.59												.05	.04												0.77
Anacortes	Puget Sound							.08				.15								.17	.76												1.16
Baker	do							T.			T.									T.	1.87		.53							.33			2.73
Bellingham	do						.09					.16								.47	.93									.05	T.		1.70
Bellingham (near)	do						T.	.11				.16								.25	.84									.01	.01		1.38
Beverly	Columbia																																
Blaine	Puget Sound						T.	.09				.38								.33	.56										.09		1.45
Blewett	Wenatchee																																
Bremerton	Puget Sound							.01														.06											0.07
Brewster	Columbia	.05	T.	T.	.05	.08	.17	.06	T.											T.	T.		T.										0.41
Bumping Lake	Yakima			.08					.25	.08											T.												0.41
Cedar River	Puget Sound	.06	.12																		.24												0.42
Centralia	Coast					T.														.37	T.												0.37
Cheney	Spokane			.24	.02		.50	.11																									0.87
Cle Elum	Yakima				.58					.05										.10													0.73
Clearbrook	Coast						.01	.04				.43								.36	.84									.10	.15		1.93
Colfax	Palouse						.05																										0.05
Colville	Columbia	.12		T.	.02		.52	.30													.02												0.98
Conconully	Okanogan	.08	.13	.02	T.	T.	.24	.11	.03											.04	.05		T.										0.70
Cowiche	Yakima	T.		.43	T.										T.					.01													0.44
Crescent	Spokane																																
Davenport	Columbia			.41	.43		.64	.23																									1.71
Dayton	do	.07					T.			T.	T.				T.																		0.07
Deer Park	Spokane	.05		.05			.81	.32																									1.23
Detroit	Puget Sound											T.								.07	.07												0.14
Dixie	Columbia	.03				T.	T.																										0.03
Dryden	Wenatchee	T.		T.	.01	.07														.02				.07									0.17
Duckabush	Puget Sound							.02				.05																					0.07
East Sound	do																																
Ellensburg	Yakima		T.		T.					.20																							0.20
Ephrata	Columbia				1.20	.45																											1.65
Forks	Coast							.09												.41	.06												0.56
Fort Simcoe	Yakima			T.	T.	.03									T.																		0.03
Gerome	Columbia		.02		.04		.24	.49	.02																								0.81
Goat Lake	Puget Sound	.10							.10												.80	.13									.07		1.20
Gold Basin	do	.05						.10				.01	.01							.17	.80												1.14
Gold Creek	Yakima			.10																.10			.05										0.25
Goldendale	Columbia														T.					T.													T.
Granite Falls	Puget Sound						T.	.11			.04	.11								.18	.98	T.											1.42
Grays River	Coast																																
Hatton	Columbia	.04		.12	.03		.07			T.																							0.26
Huntsville	do				.14					T.																							0.14
Irene Mountain	do	.16	.09	T.	.03		.27	.68	.03							T.				.04	.06												1.36
Kennewick	do		.20	.15		.16			.03																								0.54
Kettle Falls	do			.33	.05	.01	.44	.44													.06												1.33
Kiona	Yakima	.04		T.	.05																												0.09
Kosmos	Columbia						T.	.05												.12	.21												0.38
La Center	do																			.53													0.53
La Crosse	Palouse	T.		T.	T.		.08			.01		T.			T.						T.												0.09
Lake Clealum	Yakima	.12	T.	T.		.14														T.	.04	T.											0.30
Lake Kachess	do	.15						T.												T.	.09												0.24
Lake Keechelus	do																			T.	.15												0.15
Lakeside	Columbia	.20	.13	T.	.02	T.	.01	T.	T.											T.			T.	.24									0.60
Laurel	do														.02					.03													0.05
Laurier	Kettle	.03	.02	T.	.07		.35	.45	.02			T.									T.		.07							T.			1.01
Lester	Puget Sound																																
Lone Tree	Coast	.04	.01		T.	T.	.02	.04			T.		T.	T.						.32	.02												0.45
Longmires Springs	Puget Sound																																
Lost Creek	Columbia	.14		.17	.05	.14	.74	.35													.08		.11										1.78
Lucerne	do																																

TABLE 2.—*Daily precipitation for August, 1911. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Washington—Con.																																	
McConihe	Columbia	.22			.30		.05																										0.57
McCumber's ranch	do																																0.00
Moses Lake	do	.05			.05		.18			.04										T.													0.32
Mottinger	do	.38																															0.38
Mount Pleasant	Coast							.11												.57	.08												0.76
Moxee	Yakima	T.		T.	T.					.02																							0.02
Newport	Pend Oreille	.08	.31	.03	.46	T.	.51	.28	T.	T.											T.												1.67
North Head	Coast	.05					.06													.11	.01												0.23
Northport	Columbia	.44	.01	T.	T.	.11	.17	.18	T.											.02	T.												0.93
North Yakima	Yakima	T.		T.	T.	T.	.11			.10					T.					T.													0.21
Nutland	Columbia																																0.00
Odessa	do			.15			.35	T.	T.				T.		T.						T.											0.50
Olga	Puget Sound							.02			T.	.22								.22	.71								T.				1.17
Olympia	do																			.18	.04												0.22
Omak	Okanogan	T.	.11	T.			.56	T.	T.											.03	.03		T.										0.73
Oroville	do	T.	T.	.25			.18	.02				.06								.26	.06		T.										0.83
Parker	Yakima																																
Peola	Snake	.04		.52	.09										.02						T.											.01	0.68
Pomeroy	do	T.													T.																		T.
Port Crescent	Coast																			.42													0.42
Port Townsend	Puget Sound							.29				.22								.13	.20												0.84
Pullman	Palouse		.08	.18	.10		.65								T.						.02												0.43
Queets River	Coast	.04	.03	.01	T.	.01	.19	.15	T.											.38	.05								.01				0.87
Quinault	do			.02			.05	.06												.47	.05												0.65
Republic	Kettle	.03	.08	.03	.03		.34	.21	.08												.04												0.84
Rex Creek	Columbia			.03	.12																		.04										0.19
Ritzville	do			.16	.15	.24																											0.55
Rock Lake	Palouse			.31	.04		.36	.33													.03												1.07
Rosalia	do	.06	.03	.46	.03		.58	.21							T.																		1.37
Russells Ranch	Yakima		T.	.06	T.			T.	T.	T.										T.													0.06
Seattle	Puget Sound						T.													.09	.04												0.13
Sedro Woolley	do											.38								.60	1.97	.01											2.96
Sixprong	Columbia						T.	.01																									0.01
Skagit Power Dam	Puget Sound				.01	.14	.10	.10												.15	.81		.17	.10						.05			1.63
Snohomish	do							.16				.01								.05	.47												0.69
Snoqualmie Falls	do							.10												T.	.50												0.60
Snyders Ranch	Columbia		T.		.05	T.	.05	.01	T.											.02			.15										0.28
South Bend	Coast	.01	.01	.01	.01	.02	.13	.07			.01	.02	.02	.01						.26	.05												0.63
Spokane	Spokane	T.	.02	.01	.48		.48	.15												T.	.02												1.16
State University	Puget Sound	T.						.04												.02	.06												0.12
Stokes Ranch	Columbia	T.	.05		.08	.05	.16	.08												.24	.02		.04										0.72
Sullivan Lake	PendOreille																																
Sumner	Puget Sound	T.						T.												.07	.08												0.15
Sunnyside	Yakima	T.		.06						.02										T.													0.08
Tacoma	Puget Sound	T.			T.		T.			T.	T.									.12	.05												0.17
Tatoosh Island	Coast	T.					.05			.01				.02	.01					.17									.02	.01	.06		0.35
Tieton	Yakima			.02	1.05	T.														.15													1.22
Tonasket	Okanogan		.18	T.			.20																										0.38
Touchet	Columbia	T.		T.	T.	.27	T.								T.						T.												0.27
Touchet Ridge	do	.10			T.		T.																										0.10
Trinidad	do	.12			.05																												0.17
Vancouver	do							.24												.52													0.76
Vashon Island	Puget Sound																			.06	.08	T.											0.12
Wahluke	Columbia	.25		.25	.50		.04			.11																							1.15
Wallace	Okanogan	.09	.02	.30	.03	.06	.32													.05	.07											.02	0.96
Walla Walla	Columbia	T.			.02										T.																		0.02
Washougal	do							.23												.23													0.46
Waterville	do	.11	.21	.50	.20		.25		.04											T.			T.	.15									1.46
Wenatchee, near	do	.10		.28	.04				.03						T.					T.				.03									0.48
White Salmon	do										T.				.05					.03	.02												0.10
Wilbur	do			.10		.28	.15	.16																									0.69
Wind River	do																			.10	.20												0.30
Winthrop	do	T.	.02	.15	T.	T.	.30	.05												.49	.05		.01										1.07
Yale	do						.09														.16												0.25
Zillah	Yakima			T.	T.										T.																		T.
Zindel	Snake		T.	.91	.30	T.	.18														T.											T.	1.39
Oregon.																																	
Adel	SE.drainage																																
Albany	Willamette																				T.										T.		T.
Allingham	Deschutes													T.	.02	T.				T.												.11	0.13
Ana River	SE.drainage																																0.00
Ashland	Rogue																																0.00
Astoria	Columbia	.02	T.	.01	T.	.01	.19	.10				T.								22.	.11								.05				0.72
Bagley's Ranch	Snake																																0.00
Baker	do	.09		.03	T.		T.																										0.12
Bay City	Coast						.03	.05								.02				.25	.12												0.47
Bear Creek	Deschutes																																0.00
Bear Valley	SE.drainage																																0.00
Beech Creek	John Day				.18																												0.18
Bellfountain	Willamette																																0.00
Bend	Deschutes													T.	.67	.11																	0.78
Big Basin	John Day			.01																													0.01
Black Butte	Willamette																																0.00
Blalock	Columbia																																0.00
Blue Mountain Sawmill.	Umatilla				T.																												T.
Brogan	Malheur																																0.00
Buena Vista	Snake		.03		.01																												0.04
Burns	SE.drainage																																
Burns Mill	do																																0.00
Butte Falls	Rogue																																0.00
California Gulch	Umatilla			.45																													0.45
Canyon City	John Day																																
Cascade Locks	Columbia							.04												.26	.05												0.35
Cascadia	Willamette							T.												T.													T.
Cazadero	do	.02										.02								.10	.10												0.24
Christmas Lake	SE.drainage				T.																												T.
Cliff	do					.15									.03																		0.18
Columbia Mine	Snake	.03	T.	T.					T.					T.																			0.03
Condon	John Day											.03																					0.03

TABLE 2.—*Daily precipitation for August, 1911. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon—Continued																																	
Coquille River L. H.	Coast	.03	.02				.02																										0.07
Cornucopia	Snake			.21	.22	.06	.03																										0.52
Corvallis	Willamette																		.02														0.02
Cracker Creek	Snake	T.		T.	T.								T.																		T.	T.
Crescent	Deschutes														.25																.03	0.28
Dayville	John Day				T.						T.			T.	T.																	T.
Deadwood	Coast	T.																		.17												0.17
Diamond	SE. drainage																																0.00
Doraville	Columbia	.01		.01	T.	T.	.03	.01		T.		.02	.01							.25	.04												0.38
Drain	Umpqua																																0.00
Dulur	Columbia											T.			.01						.02												0.03
Duncan	Umatilla	.01		.10																													0.11
Echo	....do	.09		.02																													0.11
Ella	Columbia																																0.00
Embody	SE. drainage				T.										T.																		T.
Eugene	Willamette																																0.00
Fairview	Coast																																.....
Falls City	Willamette																																0.00
Fir Glen	Coast																																0.00
Florence	....do	.01					.02	.03												.10													0.16
Forest Grove	Willamette																			.60													0.60
Fort Rock	SE. drainage				.05										T.																		0.05
Galice	Rogue																																0.00
Gardiner	Umpqua																			.30													0.30
Glencoe	Columbia																																0.00
Gibbon	Umatilla		T.								T.																						T.
Glendale	Umpqua																																0.00
Glenora	Coast						T.	T.												.58	.21												0.79
Gold Beach	Rogue																																.....
Golden Falls	Coast	T.																		T.													T.
Granderonde	....do																																.....
Granite	John Day	T.		T.																													T.
Grants Pass	Rogue																																0.00
Grass Valley	John Day																																.....
Greenhorn	Snake	.02		.02	T.	.06									T.																		0.10
Gumboot	....do	.09	.02	.46			.05																										0.62
Gurdane	Columbia			.40											T.																		0.40
Happy Home	Umpqua																			.14													0.14
Hay Creek	Deschutes													.02		.11																	0.13
Hazeldell	Willamette																																0.00
Headworks	....do						.03	.12												.28	.10												0.53
Heppner	Columbia			.09											.13																		0.22
Hermiston	Umatilla	.52																															0.52
Hermoso Rio	Deschutes													.05		.06				.05													0.16
Hilgard	Gd. Ronde	T.		.60																													0.60
Hood River	Coluurbia																																0.00
Hoover	Willamette														.01	.02				T.													0.03
Howardville	Grnd. Ronde		.02	.06	.01																												0.09
Huntington	Snake																																0.00
Ibex Mine	John Day	.08		T.		T.																											0.08
Ironside	Snake			T.																													T.
Jacksonville	Rogue																																0.00
Joseph	Grnd. Ronde	.03		.50		.05	.07																										0.65
Kerby	Rogue																																0.00
Klamath Agency	Klamath																																0.00
Klamath Falls	....do																																.....
LaGrande	Grnd. Ronde			.33			T.								T.																	T.	0.33
Lilyglen	Rogue																																0.00
Long Creek	John Day		T.	T.	.15	T.									.02																		0.17
Long Valley	Pitt																																0.00
McKenzie Bridge	Willamette															.05																	0.05
McMinnville	....do																			.15	T.												0.15
Marshfield	Coast	.05		.04	.01	.01	.04	.06	.02											T.												T.	0.23
Maury	Deschutes				T.										.02																		0.02
Meacham	Umatilla					.50	T.	T.																									0.50
Medford	Rogue														T.																		T.
Merrill	Int. drainage																																0.00
Metolius	Deschutes															.17																	0.17
Mikkalo	John Day																																0.00
Miller Prairie	....do																																0.00
Miramonte Farm	Willamette	T.					T.													.09													0.09
Monroe	....do																																.....
Mountain Home	Columbia						T.	.12												.18	.04												0.34
Mount Angel	Willamette							.02												.04													0.06
Mount Hood	Columbia														.05					.03													0.08
Mountain Ranch	Rogue																																0.00
Musick	Umpqua															T.				.10													0.10
Newport	Coast							.15												.22													0.37
Ochoco	Deschutes				T.	T.								T.	T.	.12																	0.12
Ochoco Creek	....do					T.									.12																		0.12
Owyhee	Owyhee					T.																									T.		T.
Paisley	SE. drainage																																.....
Paulina	Deschutes		.75																														0.75
Pendleton	Umatilla			.05	.06																												0.11
Persist	Rogue																																0.00
Pilot Rock	Umatilla			.09																													0.09
Pompeii	Columbia																																.....
Portland	Willamette						T.	.15				T.		.01						.12												T.	0.28
Port Orford	Coast																																0.00
Post	Deschutes				.09										T.																		0.09
Power House	Walla Walla																																.....
Prairie City	John Day	.03				.09																											0.12
Prineville	Deschutes																																0.00
Prospect	Rogue																																0.00
Ramsey	Columbia														T.					.02													0.02
Range	John Day																																0.00
Ray Creek	Columbia			.26											.08																		0.34
Redmond	Deschutes																																.....
Reston	Umpqua																																0.00
Richland	Snake			T.																													T.
Riverdale	Deschutes				.02																												0.02
Riverside	Malheur																																.....

TABLE 2.—*Daily precipitation for August, 1911. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon—Continued.																																	
Rock Creek	Willamette																			T.													T.
Roseburg	Umpqua																																0.00
Rosland	Deschutes				.03										.20	.05																	0.28
Salem	Willamette											T.								T.	T.												T.
Seneca	SE. drainage																																
Silver Lake	do				T.									T.																			T.
Siskiyou	Rogue																																0.00
Sisters	Deschutes													.18	.12	.50																.02	0.82
Sparta	Snake			.02	.01			T.																									0.03
Stafford	Willamette																			.15													0.15
Starkey	Grnd. Ronde			.60											.04																		0.64
Summit	Willamette	T.						.02												.14													0.16
Summit Prairie	Deschutes														T.																		
Susanville	John Day	.06				.16																											0.22
Tamarack	do														.15	.05																	0.20
Telocaset	Snake			.37																												.01	0.38
The Dalles	Columbia																																
Tinroof Cabin	Umatilla			.60	T.										T.																		0.60
Toledo	Coast																			.15													0.15
Trail	Rogue													T.																			T.
Trask	Coast																		.24	.52	.23												0.99
Umatilla	Columbia	.18							T.																								0.18
Unity	Snake			.05																													0.05
Vale	Malheur						.04																										0.04
Valley Falls	SE. drainage																																0.00
Van	Malheur																																
Wallace Orchard	Willamette												T.							T.													T.
Walloupa	Grnd. Ronde		.04	.03	T.	.08																										T.	0.15
Wallowa	do		.07	.15																												T.	0.22
Wamic	Deschutes													T.	T.																		T.
Warmspring	do														.30																		0.30
Wasco	Columbia															.03																	0.03
Welches	do	T.						T.							T.					.50	.06												0.56
Westfall	Malheur																											.02	.08	.01			0.11
Weston	Walla Walla	T.		T.	T.	T.								T.																			T.
Williams	Rogue																																0.00
Yonna	Int. drainage																																0.00

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 12, Columbia Valley.*

Date.	Montana.				Wyoming.		Idaho.																			
	Kalispell.		Missoula.		Afton.		Boise.		Bonners Ferry.		Hot Spring.		Lewiston.		Mackay.		Meadows.		Pocatello.		Salmon.		Shoshone.		Vernon.		Wallace.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	74	52	78	53	83	33	81	54	76	46	83	52	77	59	79	41	.....	.....	83	51	77	47	.....	.....	81	41	66	52
2....	65	52	72	52	70	42	79	50	75	45	83	57	84	58	78	41	.....	.....	76	56	66	52	.....	.....	70	45	75	50
3....	72	48	80	41	76	34	86	54	70	45	90	52	82	59	82	47	.....	.....	82	49	76	41	.....	.....	75	42	73	46
4....	71	51	86	53	78	34	81	51	73	42	89	52	89	55	75	45	.....	.....	80	49	75	45	.....	.....	76	43	74	46
5....	69	51	72	53	81	35	81	60	78	40	88	55	85	56	75	41	.....	.....	81	48	78	45	.....	.....	75	46	77	46
6....	65	50	75	44	74	43	87	55	68	40	92	54	82	62	83	48	.....	.....	81	54	73	46	.....	.....	75	42	67	47
7....	64	47	84	48	83	37	86	54	68	49	92	55	82	59	81	46	.....	.....	89	57	82	43	.....	.....	82	41	72	51
8....	70	45	78	40	84	38	88	54	69	39	91	55	85	52	90	45	.....	.....	88	56	84	43	.....	.....	83	45	74	40
9....	68	46	78	48	86	36	82	54	74	40	88	52	84	54	91	44	.....	.....	85	52	83	48	.....	.....	84	46	75	43
10....	72	43	82	38	81	37	86	52	83	38	91	45	90	52	88	49	.....	.....	85	54	81	45	.....	.....	80	46	81	43
11....	76	45	87	46	84	36	89	55	85	46	93	55	90	63	89	45	.....	.....	90	59	89	46	.....	.....	86	42	83	46
12....	80	48	91	45	86	39	90	56	82	42	92	50	89	58	89	45	.....	.....	91	64	87	43	.....	.....	86	45	80	46
13....	81	48	88	46	84	40	88	54	80	48	93	56	90	56	86	46	.....	.....	90	64	90	45	.....	.....	85	42	80	47
14....	82	46	89	44	85	38	90	54	80	42	92	57	90	54	84	47	.....	.....	90	61	88	46	.....	.....	86	52	80	43
15....	76	48	85	43	86	40	84	52	80	47	94	58	83	60	87	45	.....	.....	87	54	87	45	.....	.....	84	42	77	46
16....	78	46	88	44	79	34	91	53	84	40	93	56	95	53	87	44	.....	.....	90	47	87	44	.....	.....	84	40	87	41
17....	82	47	94	44	90	39	93	58	86	41	94	59	102	55	87	45	.....	.....	93	51	88	45	.....	.....	89	47	92	44
18....	84	52	95	48	90	37	94	58	91	41	92	57	93	63	89	45	.....	.....	94	56	93	46	.....	.....	90	46	87	48
19....	87	51	96	48	89	38	87	62	80	45	94	54	84	59	96	43	.....	.....	94	55	91	47	.....	.....	89	48	80	47
20....	64	49	71	56	81	41	75	54	78	44	90	53	74	52	100	41	.....	.....	77	54	80	42	.....	.....	75	36	56	48
21....	66	45	70	37	78	24	77	49	73	45	84	47	83	47	93	44	.....	.....	80	44	76	40	.....	.....	77	31	70	39
22....	68	40	70	49	80	37	81	50	75	35	85	51	87	50	75	40	.....	.....	79	47	75	44	.....	.....	76	38	73	40
23....	70	46	75	53	76	30	80	49	79	41	84	50	84	54	76	43	.....	.....	79	44	76	45	.....	.....	75	38	75	41
24....	74	38	81	36	74	30	81	50	78	45	82	47	88	50	73	41	.....	.....	74	45	78	38	.....	.....	75	33	80	39
25....	70	44	79	39	78	31	83	53	74	45	86	46	88	52	77	41	.....	.....	80	41	79	38	.....	.....	77	34	79	43
26....	67	38	76	40	80	29	82	51	83	34	85	51	86	52	78	46	.....	.....	79	46	78	42	.....	.....	78	35	76	38
27....	71	40	80	47	79	27	84	50	83	47	86	45	90	50	81	46	.....	.....	80	41	81	41	.....	.....	79	44	81	40
28....	80	41	86	38	80	30	88	53	78	47	90	50	90	51	82	47	.....	.....	87	49	83	40	.....	.....	82	40	79	41
29....	79	44	85	46	82	39	86	57	75	47	92	50	88	58	84	45	.....	.....	86	57	86	50	.....	.....	85	38	78	43
30....	84	53	89	46	80	38	89	54	85	45	94	52	93	58	86	49	.....	.....	87	51	84	42	.....	.....	82	38	82	50
31....	88	50	92	40	77	35	92	59	90	50	98	57	94	58	87	48	.....	.....	87	52	87	43	.....	.....	85	45	87	48
Mns..	74.1	46.6	82.3	45.3	81.1	35.5	85.2	53.8	78.5	43.3	89.7	52.6	87.1	55.5	84.1	44.6	.....	.....	84.7	51.9	81.9	44.1	.....	.....	80.8	41.6	77.3	44.6

Date.	Washington.																									
	Aberdeen.		Blaine.		Colville.		Kosmos.		Lakeside.		North Head.		North Yakima.		Odessa.		Port Crescent.		Seattle.		Six-prong.		Spokane.		Tacoma.		Tatoosh Island.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	64	52	71	53	83	46	64	53	80	59	62	53	80	60	82	52	58	48	67	54	78	62	74	56	68	53	56	51
2....	65	50	69	49	87	47	74	54	87	57	61	54	86	56	79	52	61	50	67	55	88	67	79	52	66	53	56	50
3....	64	51	72	50	80	57	73	55	84	59	60	54	85	63	85	49	58	50	74	54	85	62	75	58	74	55	55	51
4....	66	52	71	53	77	45	73	52	78	56	58	53	86	56	80	45	60	49	68	55	90	73	78	53	69	53	54	50
5....	66	51	70	50	77	48	80	48	84	53	59	53	86	56	75	46	60	49	73	53	88	61	76	50	74	52	55	49
6....	66	51	65	55	72	44	65	55	79	59	59	54	82	58	76	41	62	51	64	55	83	62	63	56	64	55	54	51
7....	66	50	69	52	73	54	66	52	78	56	62	55	81	53	75	42	62	51	71	54	82	54	65	56	69	55	57	51
8....	68	52	72	47	78	46	74	48	80	56	57	54	84	54	78	43	58	49	72	53	85	51	75	51	72	52	54	49
9....	68	51	70	44	82	42	72	48	85	56	55	52	83	57	82	41	57	49	71	51	86	59	78	54	73	52	52	49
10....	67	52	68	44	85	40	68	52	87	56	55	52	87	56	86	46	58	48	70	50	90	58	81	49	69	51	54	49
11....	68	49	65	51	88	46	68	52	89	56	56	52	88	59	88	47	58	50	62	52	89	61	85	60	60	52	54	49
12....	66	48	66	47	85	42	68	51	88	57	56	53	90	55	88	45	58	48	62	55	89	52	82	56	62	54	54	48
13....	69	46	69	47	86	40	71	53	86	58	59	53	90	52	86	47	60	41	67	54	91	53	81	57	66	53	59	49
14....	70	49	69	43	83	37	73	47	88	54	61	54	85	55	85	41	61	41	65	54	90	51	85	51	65	52	58	47
15....	72	48	68	52	82	47	77	50	84	57	65	54	80	51	86	45	63	45	69	54	83	58	78	57	69	54	67	48
16....	68	46	73	40	90	40	83	57	89	54	62	53	88	54	88	45	69	40	73	51	91	55	85	51	73	47	63	48
17....	69	40	75	42	92	40	80	38	92	54	63	56	92	62	95	51	66	42	78	51	96	65	89	53	79	52	58	50
18....	72	42	74	52	95	42	82	40	94	62	62	56	89	60	93	52	62	44	76	53	95	60	90	56	76	51	53	47
19....	69	48	73	47	82	47	70	52	87	65	61	56	83	66	83	48	58	45	69	54	83	42	80	57	66	52	57	48
20....	72	56	60	54	73	47	60	53	77	54	61	55	74	45	85	47	62	44	61	53	79	54	65	51	65	54	56	50
21....	81	61	71	44	79	47	84	43	80	54	67	54	80	52	76	43	70	42	72	51	83	49	73	48	68	52	57	47
22....	88	62	79	46	85	36	90	40	86	53	75	59	83	52	80	54	76	45	81	56	87	59	75	53	81	53	66	49
23....	89	48	78	44	84	42	90	38	80	54	73	58	82	57	86	43	76	49	80	59	87	57	76	54	80	55	63	50
24....	84	46	75	43	86	36	92	43	88	55	58	52	86	49	88	40	64	45	81	56	90	57	84	47	79	52	59	47
25....	80	41	76	47	84	36	88	41	88	57	59	52	88	57	86	43	72	42	75	56	92	55	82	52	75	52	61	48
26....	87	48	80	43	86	37	87	40	85	55	71	54	84	57	87	42	83	46	79	57	87	65	78	49	77	52	68	49
27....	88	52	75	42	89	38	91	41	90	54	57	51	86	50	87	46	60	43	81	54	90	75	82	47	82	54	56	49
28....	81	50	68	50	82	36	70	43	88	58	60	53	85	57	86	42	59	50	67	54	90	60	81	50	70	55	53	50
29....	74	46	63	53	77	38	64	39	84	54	59	55	88	56	88	46	61	51	68	51	92	53	81	56	75	48	56	51
30....	70	41	75	55	91	46	80	39	90	64	59	55	88	60	88	45	67	55	76	53	93	63	86	58	78	52	59	53
31....	78	62	72	53	90	48	86	49	92	63	58	54	90	62	93	54	66	51	73	56	96	63	91	57	74	58	61	53
Mns..	72.7	49.7	71.0	48.1	83.3	43.1	76.2	47.3	85.4	56.7	61.0	54.0	84.8	56.0	84.5	45.9	63.4	46.9	71.4	53.8	88.0	58.6	79.1	53.4	71.5	52.7	57.6	49.4

TABLE 3.—*Maximum and minimum temperatures at selected stations for August, 1911. District No. 12*—Continued.

Date.	Walla Walla, Wash.		Oregon.																			
			Ashland.		Baker.		Eugene.		Gold Beach.		Hermiston.		Marshfield.		Portland.		Prineville.		Roseburg.		The Dalles.		Vale.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	77	63	81	50	69	52	76	52	.....	.....	88	62	66	53	68	58	90	38	72	54	.....	.....	88	55
2	86	60	82	49	76	48	79	47	.....	.....	89	59	66	49	72	57	94	40	84	50	.....	.....	86	47
3	82	62	84	54	66	47	78	48	.....	.....	89	59	64	54	71	59	90	41	79	51	.....	.....	83	46
4	87	60	84	52	73	44	76	52	.....	.....	91	54	66	54	73	57	87	45	81	56	.....	.....	89	45
5	86	58	85	53	75	46	82	49	.....	.....	92	56	64	53	78	58	86	34	86	53	.....	.....	90	48
6	82	63	84	52	77	50	78	52	.....	.....	85	61	65	55	70	57	86	39	79	51	.....	.....	87	47
7	79	58	85	55	79	45	72	55	.....	.....	82	58	66	54	70	56	89	42	77	52	.....	.....	93	48
8	82	56	81	51	79	45	75	47	.....	.....	87	57	68	50	74	52	90	41	78	51	.....	.....	90	46
9	83	58	82	50	74	54	78	48	.....	.....	87	57	65	53	73	56	90	43	83	48	.....	.....	89	48
10	91	61	80	56	82	47	77	48	.....	.....	92	47	63	53	71	56	87	43	76	50	.....	.....	88	55
11	86	63	81	48	83	49	70	55	.....	.....	92	62	66	53	68	55	89	40	78	54	.....	.....	95	41
12	88	60	86	51	84	50	74	43	.....	.....	93	62	62	44	68	56	90	42	80	47	.....	.....	97	51
13	89	61	82	51	81	46	73	51	.....	.....	92	57	66	49	70	52	91	46	70	51	.....	.....	96	57
14	86	62	80	53	83	51	70	50	.....	.....	85	56	69	46	71	57	86	41	69	49	.....	.....	93	45
15	82	58	83	48	78	42	75	52	.....	.....	87	55	70	43	75	58	83	41	78	56	.....	.....	91	42
16	91	59	78	46	88	47	80	46	.....	.....	92	48	73	42	82	51	86	41	83	45	.....	.....	97	40
17	94	63	81	51	91	52	80	49	.....	.....	98	51	73	43	81	55	84	45	84	48	.....	.....	101	47
18	92	64	85	52	88	51	81	48	.....	.....	95	61	72	46	82	53	86	34	84	47	.....	.....	99	51
19	81	61	77	49	81	49	72	53	.....	.....	90	59	70	54	87	60	90	38	76	52	.....	.....	93	50
20	76	57	78	46	68	42	73	47	.....	.....	88	60	70	45	70	58	86	40	78	47	.....	.....	83	54
21	81	54	88	50	73	41	84	47	.....	.....	92	61	69	47	85	55	89	40	87	47	.....	.....	83	44
22	83	55	91	54	77	46	89	48	.....	.....	89	47	79	55	88	61	90	44	93	51	.....	.....	91	47
23	84	55	91	57	74	44	90	51	.....	.....	89	52	69	53	90	62	91	47	93	51	.....	.....	86	47
24	89	58	88	54	78	41	88	48	.....	.....	92	45	68	54	89	61	91	41	92	50	.....	.....	87	41
25	88	63	90	56	81	41	86	52	.....	.....	92	43	65	50	86	60	86	35	90	52	.....	.....	94	37
26	85	54	86	54	77	49	85	50	.....	.....	89	45	70	53	86	60	88	36	88	51	.....	.....	88	45
27	89	56	84	55	81	41	87	50	.....	.....	92	42	64	49	89	60	92	40	88	50	.....	.....	89	41
28	88	66	85	56	81	47	83	49	.....	.....	91	43	66	52	72	58	88	39	87	49	.....	.....	95	40
29	87	61	87	54	81	47	83	49	.....	.....	92	53	71	45	80	52	85	43	87	51	.....	.....	95	43
30	93	65	88	55	86	47	85	50	.....	.....	93	57	70	43	84	60	77	36	89	50	.....	.....	98	49
31	95	65	86	58	90	54	83	55	.....	.....	97	57	64	52	85	61	80	34	86	55	.....	.....	97	45
Means	85.9	60.0	84.0	52.3	79.2	46.9	79.4	49.7	.....	.....	90.4	54.4	67.7	49.9	77.0	57.1	87.9	40.5	82.4	50.6	.....	.....	91.3	46.4

INFLUENCE OF ARTIFICIAL HEATING ON THE CLIMATE OF CITIES.

By GEORGE W. MINDLING, Observer.

Mr. Reginald P. Bolton, president of the American Society of Heating and Ventilating Engineers, in a paper presented at a recent meeting of that body, has made some interesting statements regarding the effects upon weather conditions produced by the enormous fuel consumption in New York City, of which the most important are substantially as follows: (1) That the rapidly increasing consumption of fuel has lessened the number of days with a temperature as low as or lower than zero; (2) that it has produced an increase in the number of cloudless days; (3) that it is causing a progressive decrease in precipitation, particularly in the winter months; (4) that it has lowered the relative humidity of the air over the city approximately 7 per cent; and (5) that all these effects are physically determined by the amount of heat artificially produced in the city, which, according to Mr. Bolton's computations, is sufficient to raise the temperature of the air 4.94° F. over the entire area of the city (326 square miles) to the height of 1 mile. These conclusions are important if they are well founded, and therefore it is worth while to examine them in the light of the most reliable meteorological investigations and of those records that have been continued without interruption for periods of 20 to 90 years or more at New York and in cities and towns of various sizes not far away.

It is obvious that, if Mr. Bolton's theory is correct, the temperature records for New York should show higher averages in the last 20 or 30 years, particularly in the winter months, than for corresponding periods before the middle of the last century, and this increase in temperature should exceed that appearing for corresponding periods in the records of any of the smaller cities near by—for example, New Haven. Furthermore, it is obvious that if the mean temperature of the free air over New York, as represented by the locations where the Weather Bureau records have been made, has not been noticeably affected by artificial heating, then the recent variations in the precipitation, humidity, and cloudiness must be ascribed to some other cause. A discussion of the records of temperature with reference to these points appears farther on.

It must be admitted, of course, that there are differences of temperature between sites in the open country and near-by cities. The existence of such differences is well known and has been studied by such meteorologists as Rouen, Hann, Hellmann, and many American investigators. The differences vary with the weather conditions, being greatest when the sky is clear and the wind movement least. City and country sites of equal elevation and within a few miles of each other have occasionally shown a difference in temperature as great as 20° F., but the evidence presented in this article seems to indicate that the higher mean temperatures observed in cities are not due to artificial heating; that they are limited chiefly to the spaces near the surface where the wind movement is obstructed, and that artificial heating has no appreciable effect on the free air immediately over the cities.

Hellmann found that Berlin is 0.54° F. warmer than the surrounding country in winter, 1.08° warmer in spring and summer, and 0.72° warmer in autumn. It is evident that, if these differences were to be accounted for by artificial heating, they should be greatest in winter and least in summer; but, so far as the writer is able to ascertain, these differences, not only in Berlin but in all places where they have been studied, are least during the heating season.

It is not the heat produced within the buildings, but the position of the buildings, that is chiefly accountable for the higher temperatures in the heart of cities. Contributory causes are to be found in the materials used in walls and pavements, the differences in drainage, and in the character of the surface. The position of buildings in a city obstructs the natural movements of the air, while the continued reflection of solar energy from walls and pavements rapidly increases the temperature in the spaces sheltered from the winds. In the cities water is quickly conducted away by means of drains, sewers, etc., so that the ground is quite effectually prevented from becoming wet, where it is not actually sheltered by buildings or pavements, while in the country the ground everywhere is well adapted to the absorption of the rain water as a result either of tillage or of being covered with vegetation that checks the process of drainage. Consequently, when the sun appears, the increase in temperature is retarded by the process of evaporation in the country much more than in the city, due allowance being made for the sprinkling of the streets. A considerable part of the heat thus accumulated in the cities is not lost during the night for reasons stated farther on, and the nights are, therefore, much cooler in the country, especially in clear weather. It is readily seen that the causes mentioned are most active during the summer, which accounts for the fact that the greatest differences in temperature are observed during that season.

Hann's investigations led to the conclusion that the higher temperatures observed in the cities at night are due principally to the more rapid process of nocturnal radiation in the country. Unquestionably the more rapid radiation of heat in the country at night is caused by the absence of clouds of smoke such as usually hover over large cities. In a discussion read before the St. Louis Academy of Science, March 2, 1896, Hammon and Duenckle pointed out the great influence of clouds of smoke in producing the warmer nights of the cities. The underlying principle had been recognized many years before and is given practical application in frost fighting.

Hammon and Duenckle found that the average temperatures at the Weather Bureau and Forest Park Observatories in St. Louis showed a difference of 2.8° F. for a period of five years. At the Weather Bureau the thermometers were exposed 110 feet above the level of the street in the heart of the city and were closely surrounded by tall chimneys belching forth enormous quantities of smoke and were as much subject to the influence of artificial heating as they could be at any of the localities where Weather Bureau instruments have been exposed. Yet these able investigators, whose discussion

was published in the Monthly Weather Review for January, 1902, and is now universally regarded as authoritative, did not even mention the effect of artificial heating, finding that the observed differences were due chiefly to the difference in nocturnal radiation. It is worthy of note that the mean maximum (day) temperatures differed only 0.6°, while the mean minimum (night) temperatures differed by 4.6°, these at Forest Park averaging from 9.0° lower in September to 1.5° lower in December. The extreme differences ranged from 20° lower to 2° higher. A study of the observations showed that the greatest differences accompanied the clear skies of September, and the least were observed during the cloudiest months, March and December, the differences remaining small throughout the winter season. Marked exceptions to this rule occurred, but there is abundant evidence to show that they were due to such causes as clear skies and differences in wind velocity and depth of snow. The following remarks have been taken from the report of Hammon and Duenckle as published in the Monthly Weather Review:

> If two or more days showed a remarkable difference in the minimum temperatures at our two stations, as was the case in January, 1892, it was because the air remained calm and clear at the park, while the smoke appeared to be heaped up over the city. It thus appears that the principal cause of the difference in the minimum temperature readings at the Forest Park and Weather Bureau Observatories is the accumulation of smoke over the city, especially on nights when the sky is clear and the wind light. These conditions favor a rapid radiation of heat from the ground at the park, while the smoke over the city acts as a cloud covering and materially retards radiation.

Eaton's calculations (1877) showed that sufficient heat was developed by the burning of coal and gas in London to raise the mean temperature of a stratum of air 30 meters thick over an area of 118 square miles 1.2° C. an hour. But when allowance is made for the movement of the air at an average rate of 10 to 15 miles an hour, which is sufficient to replace practically all the air over the 118 square miles each hour, and for the fact that the heat artificially produced is bound to diffuse itself upward and outward indefinitely instead of being confined to a stratum of 30 meters thickness, it will be seen that the consumption of fuel is far less important in its relation to the climate than at first appears.

In the case of New York City in winter, Mr. Bolton concludes that—

> If to the volume of these gases of combustion we add the radiant heat and that imparted by convection from all sources, to which reference has been made, we find a total exceeding 4,000,000,000 heat units per 24 hours, which * * * would raise the temperature 4.94° F. over the entire area of the greater city, 326 square miles, to a height of a mile.

Assuming that these figures are correct, let us see what becomes of this heat under the influence of the wind movement at New York, an influence which Mr. Bolton evidently has overlooked. In the monthly and annual summaries contained in the reports of the Chief of the Weather Bureau we find that the average hourly velocity at New York varies from 12 to 18 miles during the winter months, the anemometer being exposed at an altitude of 350 feet. At greater altitudes the velocity of the wind is correspondingly higher, and for the entire stratum of air within a mile from the surface the average velocity for all the winter months is certainly not less than 18 miles an hour. (See Davis, Elementary Meteorology, p. 97.)

If New York were in the form of a square about 18 miles in breadth, this average velocity would be sufficient to renew practically all the air over the city once each hour, or 24 times daily. Therefore the heating effect of combustion, on which Mr. Bolton relies to raise the temperature 4.94°, would be but one twenty-fourth of that amount, or about two-tenths of a degree. But the city is not in the form of a square, and its position is such that the winds usually blow across it in the shortest direction. The city being about 6 to 9 miles wide (excluding water surfaces) and trending nearly northeast and southwest, it is crossed by the east, southeast, west, and northwest winds in such a manner that the air over it is renewed about two and a half times an hour, or 60 times daily on the average. Therefore during the prevalence of these winds, which, according to the most reliable records, covers fully two-thirds of the time, the heating effect of combustion upon the temperature of the free air is one-sixtieth of 4.94°, or somewhat less than one-tenth of 1°. It need only be suggested how insignificant this heating effect becomes under the influence of a strong northwest gale, such as generally precedes the principal cold waves of winter.

Of course, the heat artificially produced is not lost to as great a degree in the spaces near the surface that are sheltered from the wind, but from the foregoing it is evident that the temperature of the free air can not be appreciably affected by the heat of combustion. On the average the stratum of air whose temperature is subject to appreciable influence (say a change of one-third of a degree) from artificial heating can scarcely be more than 100 feet thick over the city as a whole, and were it possible to raise the temperature of this by artificial means as much as 50°, it would be equivalent to raising the average temperature of a stratum of air 1 mile in thickness less than 1°, which usually would not suffice to produce any apparent effect on the degree of cloudiness or on the relative humidity, and still less on the amount of precipitation.

If the influence of artificial heating is as great as Mr. Bolton has stated it to be, we should find the mean annual temperature at New York City not less than 2.5° higher during the last 30 years than in the 30 years ending in 1851, and the mean annual temperature should show a gradual increase during the intervening period. On examination of the records we find the mean annual temperature for the 30 years ending in 1851 to be 51.7°, while for the 30 years ending in 1910 it is only 0.5° higher. It will be seen that there has not been a gradual increase in the temperature and that the mean for the last decade was not higher than for some others. As in the case of all other stations, the records for New York exhibit slight variations that have been repeated again and again. The mean annual temperatures for successive periods of 10 years ending with 1910 are 52.1°, 50.7°, 51.0°, 52.3°, 51.2°, 51.7°, 52.5°, and 52.3°. The variations here shown furnish no evidence of any effect of artificial heating, since it appears that there have been repeated changes from lower to higher and from higher to lower, while the mean for the first decade given is almost the same as that for the last. It is known that variations such as those at New York and even greater are brought about by natural causes and must continue to occur indefinitely. The variations here indicated, in reality, constitute an evidence for what has been termed the

Brückner period, so called in honor of the celebrated German meteorologist whose investigations led him to the discovery that in most parts of the world "groups of relatively cool and rainy years alternate with groups of warmer and dryer years, the whole cycle having an average period of 35 years, though the actual length of any individual cycle may be as great as 50 years or as little as 20." (W. L. Moore, Descriptive Meteorology, p. 277.)

[The shading indicates the excess or deficiency of mean monthly and annual temperatures for the 30-year period ending with 1910 as compared with the means for the 30-year period 1822–1851.]

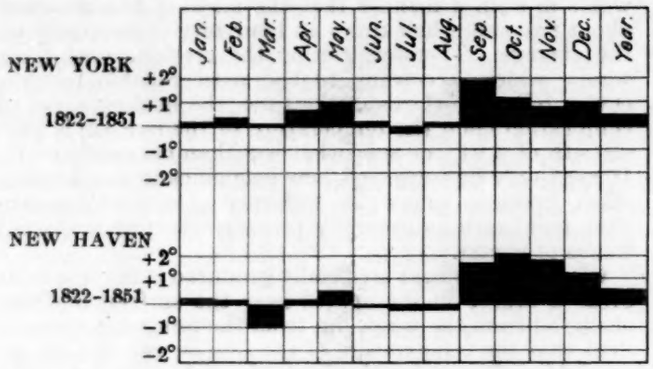


FIG. 1.—Comparison of mean temperatures for the 30-year periods ending in 1851 and 1910.

In connection with the preparation of this article the writer made a special study of the United States Weather Bureau records of temperature for many stations besides New York, particularly those of Philadelphia, Atlantic City, New Haven, and Setauket, which is situated near the middle of Long Island. These were selected without regard as to what the nature of their evidence might be, but were taken because they were the most satisfactory records available for points within a reasonable distance from New York, records not covering at least 20 years without interruption being of no special value in this study.

Table 1 and figures 1 and 2 serve to show the general agreement of the climatic variations in New York and places within a moderate distance where the amount of artificial heating is insignificant compared with that in New York. From Table 1 it appears that the mean annual temperature was generally higher for the period 1891–1900 than in either the preceding or following decade. From figure 1 it will be seen that the monthly means for January, March, April, and July show an increase in temperature during the last three decades, while in February and November there has been a continued decrease during the same period. Both increases and decreases appear in the other months, but the variations are quite similar at the several stations. The decrease in temperature during successive decades in February and during the last decade in November and December is not in accordance with the theory that artificial heating has a tendency to raise the temperature of the free air, while the increase found in the other winter months is not sufficient to indicate a higher average temperature for the heating season during the more recent years. If the increase in temperature at New York for January and March be ascribed to the influence of artificial heating, how shall it be accounted for in the little village of Setauket?

Mean monthly and annual temperatures for successive periods of 10 years each were obtained and the variations in these means from decade to decade were noted. (See Table 1.) It was desired to ascertain whether such variations as appear in the New York records are peculiar to that station or similar to those of other stations. Marked similarity was found in these variations at New York, Atlantic City, Setauket, and New Haven, where we should expect to find some resemblance, as these stations, being near each other and the ocean, are subject to similar vicissitudes of climate. (See fig. 1.) No such similarity in the variations of temperature from decade to decade could occur at these stations if artificial heating produced an appreciable effect upon the mean temperature of the free air where the records were made.

[Dotted lines indicate excess or deficiency of average temperatures for the later decade as compared with those of the earlier decade designated in the margin.]

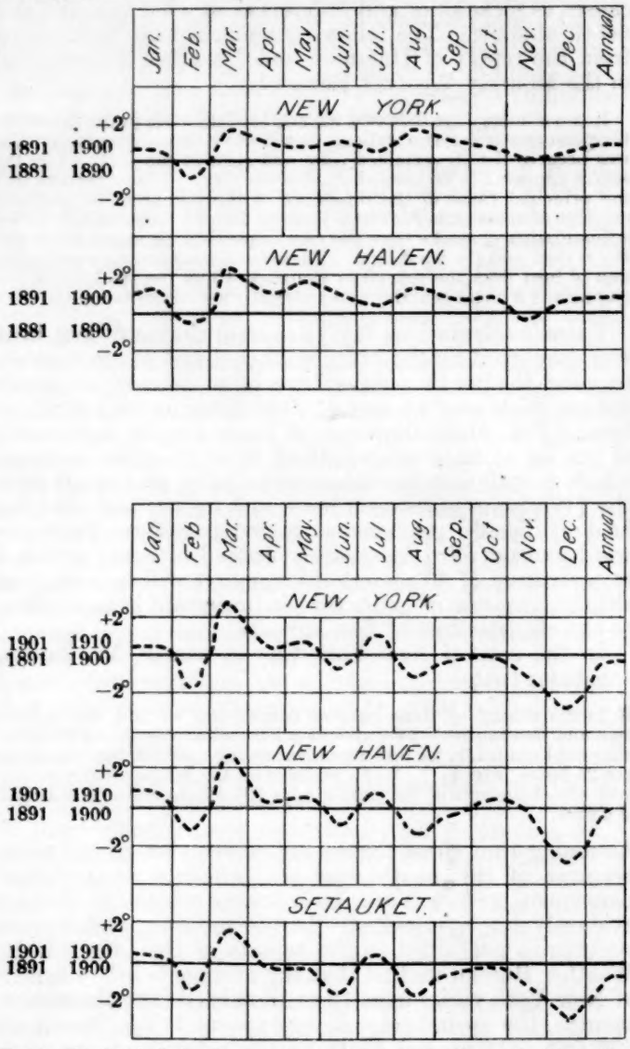


FIG. 2.—Showing similarity of temperature variations at New York and other stations.

Comparing the mean monthly and annual temperatures for the last 30 years at New York with those for 30 years ending in 1851 at the same place, we find that the temperatures for the last 30 years are higher than those

of the earlier period, except in July, but the differences are slight, amounting to only half a degree for the year, with a maximum of 1.9° in September. (See fig. 2.) A similar comparison based on the records for New Haven shows substantially the same variations. These differences appear very small when we remember that in the course of so many years the position of the instruments, the hours of observation, the observers, and the methods of computing the mean temperatures have all been changed one or more times, and probably the instruments also. A difference of half a degree or more in the mean annual temperature might result from a single circumstance, such as a change in the position of the instruments or the adoption of a new method of reducing the observations, though it is presumed that variations due to such causes counterbalance each other to some extent. However, the differences between the earlier and later 30-year periods at New York and New Haven are so nearly equal as to indicate that they are due to general, not local, conditions.

In support of the belief that the climate of cities is subject to changes induced by artificial heating, it has been stated that the frequency of temperatures as low as or lower than zero has shown a marked falling off at New York in recent years, particularly since 1904. The truth of this assertion is granted, but a period of six years is entirely too short a period on which to base a general statement relative to climatic changes. For the last three decades the number of days with temperatures of zero or below at Atlantic City was successively 5, 8, and 1; at New York, 5, 7, and 4; at New Haven, 30, 23, and 23. That the last decade gave the smallest number of days with zero weather at the three stations accords well with what has been shown in the study of the accompanying tables, and there is no reason to suppose that slight changes from higher to lower temperatures and from lower to higher will not occur again and again in the future as they have in the past.

Methods of study similar to those employed in the case of temperature have been applied to the precipitation records for quite a number of stations, and the principal results are set forth in Tables 2 and 3. The general agreement of the variations in the rainfall at New York with those at the other stations, as shown in Table 3, is a reliable evidence that the alternation of periods of wet and dry years at New York has been brought about by causes that, with a few local exceptions, affected the entire region from the vicinity of Philadelphia to the middle Hudson Valley and central Connecticut. Comparing the mean annual amounts of precipitation for the 30 years ending in 1856 and the 30 years ending in 1910 a higher average was found for New York during the later period, while lower averages were obtained in the cases of Albany and Philadelphia. It is worthy of note that the greatest decrease happens to have occurred in Albany, where the amount of heat artificially produced is insignificant compared either with that in Philadelphia or New York. A matter of greater importance, however, is the fact that, in all the longer records, a decrease in the mean annual precipitation is invariably followed by an increase, and there is no more reason for supposing that a present decrease will be permanent in one case than an increase in another. Examination of the monthly amounts of precipitation at New York during the last 40 years has failed to show any evidence of greater drought in the winter seasons of recent years, though a study of only the last 10 or 20 years might lead to the belief that the winters are becoming permanently drier. The writer finds that only March, July, and November have had less precipitation in the last decade than in any other since 1870, while the amounts for January, February, May, and October were least in the decade ending in 1880.

Nowhere in the study of the precipitation records has there been found any evidence of decreased rainfall such as should result from higher temperatures artificially produced. Were it possible to raise the average temperature of the free air by artificial means, there can be little or no doubt that a decrease in relative humidity, cloudiness, and precipitation would follow. The relative humidity and the degree of cloudiness have not been recorded with sufficient precision to justify a study of the records of these elements in this connection, but as there is no satisfactory evidence either of increased temperature or decreased precipitation, except such as has been shown to result from natural causes, the assumption that artificial heating has affected the true climate of any city is not warranted.

TABLE 1.—*Mean temperatures, by decades.*

Stations.	1861–1870.	1871–1880.	1881–1890.	1891–1900.	1900–1910.
New York City	52.3	51.2	51.7	52.5	52.3
New Haven, Conn.	49.1	49.6	48.9	49.7	49.7
Setauket, N. Y.				51.2	50.4
Philadelphia, Pa.		53.2	54.0	54.5	54.1
Atlantic City, N. J.			51.9	52.4	52.2

TABLE 2.—*Mean annual precipitation, by decades.*

Stations.	1831–1840.	1841–1850.	1851–1860.	1861–1870.	1871–1880.	1881–1890.	1891–1900.	1901–1910.
Philadelphia, Pa.	42.41	45.52	43.06	49.37	42.69	39.57	38.63	43.39
Rancocas, N. J.					46.73	46.28	44.15	48.53
Moorestown, N. J.					42.32	45.01	47.28	48.78
Atlantic City, N. J.						44.51	35.18	35.26
Dover, N. J.							46.85	54.45
Paterson, N. J.						54.16	47.93	51.09
South Orange, N. J.					44.54	50.28	48.56	48.16
Newark, N. J.			44.91	47.44	47.59	49.59	47.66	49.08
Elizabeth, N. J.						50.41	48.78	45.81
Central Park, N. Y.					43.58	44.44	41.40	44.10
New York City	34.93	38.31	40.83	45.15	42.81	48.06	42.45	43.48
Setauket, N. Y.							46.22	44.47
Wappingers Falls, N. Y.							45.89	53.13
Hartford, Conn.					40.94	44.15	43.92	45.49
New Haven, Conn.						47.27	42.30	44.76
Albany, N. Y.	40.89	42.47	36.82	39.57	40.63	38.55	34.37	32.14

TABLE 3.—*Variations in mean annual precipitation, by decades.*

Stations.	1840–1850.	1850–1860.	1860–1870.	1870–1880.	1880–1890.	1890–1900.	1900–1910.
Philadelphia, Pa.	[1]+3.11	−2.46	+6.31	−6.68	−3.12	−0.94	+4.76
Rancocas, N. J.					−0.45	−2.13	+4.38
Moorestown, N. J.					+2.69	+2.27	+1.50
Atlantic City, N. J.						−9.33	+0.08
Dover, N. J.							+7.60
Paterson, N. J.						−6.23	+3.16
South Orange, N. J.					+5.74	−1.72	−0.40
Newark, N. J.			+2.53	+0.15	+2.00	−1.93	+1.42
Elizabeth, N. J.						−1.63	−2.97
Central Park, N. Y.					+0.86	−3.04	+2.70
New York City	**+3.38**	**+2.52**	**+4.32**	**−2.34**	**+5.25**	**−5.61**	**+1.63**
Setauket, N. Y.							−1.75
Wappingers Falls, N. Y.							+7.24
Hartford, Conn.					+3.21	−0.23	+1.57
New Haven, Conn.						−4.97	+2.46
Albany, N. Y.	+1.58	−5.65	+2.75	+1.06	−2.08	−4.18	−2.23
Number of variations agreeing in character with New York (total 34)	2	0	3	2	5	11	11
Disagreements (total 12)	0	2	0	2	3	1	4

[1] This indicates that the precipitation for the 10 years ending in 1850 averaged 3.11 inches greater than for the preceding decade, and so on throughout the table.

IS THE HEAT GENERATED BY GREAT CITIES CHANGING THEIR CLIMATES?

By ANDREW H. PALMER, Blue Hill Observatory.

The statement has frequently been made that the heat generated by great cities is changing their climates, causing them to grow warmer and drier. It is maintained that heat from many and varied sources is raising the average temperature of the air for a distance of a mile or more above the large cities. It is further alleged that zero temperatures, which were once common during winter in certain cities are now infrequent; that the rainfall has decreased at a particularly rapid rate during recent years; that the snowfall is getting less and less each winter; and that the number of cloudless days has increased from year to year; all of which are readily explained by the reported discovery of increasing city temperatures. One of the champions of these views is reported to have said: "If these conclusions are well based, then we must look forward to an increasing degree of artificial interference with the course of nature as the population and its fuel consumption grow." Half a century ago Mr. Luke Howard observed that "the temperature of the city (London) is not to be considered that of the climate; it partakes too much of an artificial warmth, induced by its structure, by a crowded population, and the consumption of great quantities of fuel in fires." (Quarterly Journal of the Meteorological Society, Vol. III, 1877, p. 313.) Mr. H. S. Eaton, while president of the Meteorological Society, asked in an address delivered before that society February 21, 1877, "Who can doubt that the climate of London has been modified by the growth of its population and of the consumption of fuel?" He calculated that the artificial and animal heat liberated within the city was sufficient to raise the mean temperature of a stratum of air 100 feet thick over the 118 square miles of metropolitan London 2.5° every hour.

Startling statements of this kind naturally invite a test of their truth. Such a test is attempted in the following study of the climatic characteristics of Boston, Mass. The data forming the basis for the study are taken from the official records of the United States Weather Bureau and of Blue Hill Observatory. Records of the Signal Service and of the Weather Bureau cover the period from 1871 to 1910, inclusive, while records of the Blue Hill Observatory cover the last quarter century. If there has been any change in the climatic characteristics of Boston within recent years it should be evident from a comparison of the records of the two institutions. While Boston has changed greatly within the 40 years for which data are available, the immediate environment of Blue Hill Observatory has remained practically unchanged since its foundation by Prof. A. Lawrence Rotch in 1885. During the period considered the exposure of the instruments at the Boston office of the Weather Bureau was changed twice, but as the displacement in each case was a matter of a few feet only, no correction was made by the bureau. The instruments are at present located upon the roof of the post-office building, 115 feet above the street level, or 125 feet above mean sea level. At the Blue Hill Observatory the instruments are kept outside in an inclosure about 50 feet from the building, their height being 635 feet above sea level. The same kinds of standard instruments are employed at the two stations, the thermometer in each case being kept in a Hazen shelter, and the cylindrical rain gauge resting upon the roof in Boston and upon the ground at Blue Hill.

TEMPERATURE.

In Table I are given the mean annual temperatures at Boston and at Blue Hill for 40 years, the data for Blue Hill previous to 1886 having been interpolated from a record kept at Milton Center (3½ miles northeast of and 580 feet lower than the observatory), and corrected to make them continuous with those since obtained at the observatory. From the fact that the differences between the mean annual temperatures of Boston and Blue Hill are not increasing from year to year it is not apparent that the increased amount of heat evolved at the former place is having any appreciable effect upon its temperatures. Moreover, the general trend of the temperatures of Boston is about stationary, there being no persistent change upward or downward. Like all other climatic data, the mean temperature varies from year to year, but a smoothed curve representing them all would be practically a straight line. A comparison shows that all of the mean annual temperatures of Boston are somewhat higher than those for Blue Hill. Similar differences are found whenever urban and suburban temperatures are compared, and are usually explained by such differences between the two places as (*a*) the greater heat retaining power of buildings, street pavements, etc, in cities as contrasted with open fields; (*b*) the relatively stagnant condition of the air in cities owing to the sheltering effects of structures as compared with the ease with which air is mixed by the wind in the outlying districts; and (*c*) a lesser radiation of heat at night in cities because of the presence of smoke. After discovering that the minimum temperatures recorded during the cold waves of January, 1884, in the larger cities of Ohio were from 2° to 8° higher than those recorded in the outlying districts, Prof. T. C. Mendenhall concluded that the discrepancies were explained largely by differences in exposure between the two groups of stations. (Science, III, 1884, p. 306.) So largely are temperatures affected by the environment of the thermometer that he urged that stations be placed near, rather than in, large cities, sufficiently distant to remove them from local effects, a policy now being pursued to some extent by the Weather Bureau. This persistent difference between urban and suburban temperatures should not be confused with the alleged progressive increase in city temperatures. It should also be stated at this point that the "sensible temperature" in the city is higher than that in the country because of the greater radiation and reflection of heat from walls and streets in the former place.

Comparisons of this kind are important in deciding the question at issue, for when the Boston temperatures alone are studied it is hard to reach a conclusion, as the data are irregular and sometimes conflicting. Two years have had mean temperatures at least 2° below the

normal for the period, these years being 1875 and 1904, while in but one year was the mean 2° or more above the normal, that year being 1908. In regard to the seasons, the winters of 1880, 1890, and 1906 had positive departures of 4° or more from the mean winter temperature for the period, while the winters of 1873, 1875, 1904, and 1905 had negative departures of the same amount. (By the winter of any year is meant the winter during which the year began—the winter of 1880, for example, means the winter of December, 1879, to February, 1880.) The springs of 1871, 1894, 1902, 1903, and 1910 had positive departures of 3° or more, while those of 1874, 1882, 1885, and 1888 had equally large negative departures. The summers of 1872, 1876, 1900, and 1908 were 2° or more warmer than the mean, while those of 1886, 1902, and 1903 were that much colder than the average. In 1881, 1900, and 1908 the autumns were at least 3° higher than the average, while in 1871, 1873, 1875, and 1876 they were that much colder than the mean. Ten of the 15 relatively warm seasons occurred during the second half of the period, while 11 of the 15 relatively cold seasons occurred during the first half.

In Table II are given the warm and cold months during the last 40 years, a month having been termed warm or cold when its departure equalled or exceeded the amount stated. These amounts are wholly arbitrary. By actual count 16 relatively warm months occurred in the 20 years 1871 to 1890, inclusive, while 23 occurred during the 20 years 1891 to 1910, inclusive. Moreover, 26 relatively cold months occurred during the first of these two periods, while but 12 occurred during the second.

The number of days (*a*) with a maximum temperature of 32° or below, (*b*) with a minimum temperature of 32° or below, and (*c*) with a minimum temperature of 0° or below for each of the winters from 1872 to 1909 is given in Table III. An inspection of the table will show that although the number of days in each case varies from year to year, no persistent increase or decrease is apparent, unless it be the fact that during the first half of the period in only one winter there were no days with a minimum temperature of 0° or below, while during the latter half there were six such years. During the 18 winters preceding that of 1890-91, 518 days had maxima of 32° or below, while during the 18 years following it there were 572 such days. Of days having minimum temperatures of 32° or below, 2,065 occurred during the first of these periods, while 1,878 occurred in the second. Again 66 days in the earlier period had minimum temperatures of 0° or lower, while there were but 39 such days during the later period. As far as maximum temperatures are concerned, it was found that during the period 1872 to 1908, inclusive, there were 261 days on which the temperature reached 90°. Of these 134 occurred before 1890, while 122 occurred since that year.

Observations made at Baltimore, Md., during a period of 88 years, 1817 to 1904, inclusive, do not lend support to the contention stated at the beginning. (O. L. Fassig, The Climate and Weather of Baltimore, p. 93.) During the first half of this period the mean temperature in each of two years was at least 2° lower than the normal, while during the latter half the number was four. On the other hand six of the first 44 years were at least 2° warmer than the normal, while but two of the last 44 years were similarly warm. The latter fact is exactly contrary to what one should expect if the contention stated above were true. It is interesting to note that whereas the mean temperature for the whole period is 55.6°, the mean for the period 1817 to 1870, inclusive, is 55.9°, while that from the period 1871 to 1903, inclusive, is but 55.3°.

Data obtained from the archives of the Observatory of Paris, covering a period of 71 years, 1800 to 1870, inclusive, fail to show any heating effect caused by the increasing amount of heat evolved by that city. The average temperature for the 35 years preceding and succeeding the year 1835 is exactly the same, 51.3° Three negative departures in the mean annual temperature amounting to at least 2° occurred in each half of the period, whereas all the positive departures of that amount, three in number, occurred during the first 35 years.

PRECIPITATION.

In Table IV are contained the annual precipitation for Boston during the last 40 years and that for Blue Hill the last 25 years. While the preciptation varies greatly from year to year at each of the two places, there is no apparent increase in the difference between the two such as would be the case if, as one expressed it, the "ascending mass of hot gases from the city prevent rain fall within the city by warming the upper layers of air and increasing their capacity to absorb water."

An examination of the table will show that the annual precipitation in Boston is less than that at Blue Hill. In this connection it should be remembered that the rain gauge on Blue Hill is 510 feet higher than that in Boston, and that the high buildings in the vicinity of the Boston post office deflect winds from certain directions to a considerable degree, and thus necessarily affect the rainfall to some extent. However, the point to be emphasized here is the fact that the difference between the annual precipitation recorded in Boston and on Blue Hill is not increasing appreciably.

The mean annual precipitation in Boston for the 20 years, 1871 to 1890, inclusive, was 45.91 inches, while that for the 20 years, 1891 to 1910, inclusive, was 38.80 inches. At first sight a decrease of over 7 inches per year in the average seems to lend support to the statement quoted above, but as a matter of fact the rainfall has been deficient in recent years all over New England, whether the observations were obtained in cities or in the country. This is true also in regard to snowfall, for measurements made at the base of Blue Hill show that the average snowfall there during 5 of the last 6 years was below the normal for the last 25 years. Moreover, city dwellers frequently forget that snow is carted away from city streets and that it melts more rapidly upon brick pavements and the roofs of houses than upon bare and frozen fields. Persons moving from rural or suburban homes to steam-heated apartments in the city naturally conclude that the winters there are milder and are accompanied by less snowfall. Moreover, the man who recalls the deep snows of his boyhood often fails to realize that it was much more difficult for him to wade through 2 feet of snow when he was 4 feet tall than when his height had become 6 feet.

Records of precipitation for Baltimore, Md., covering the 87 years, 1817 to 1903, inclusive, show no decrease in the annual rainfall parallel to the growth of the city. The average annual precipitation in inches for each of the 8 decades beginning with that of 1821–1830 is as follows: (1) 38.01, (2) 41.25, (3) 37.82. (4) 41.46, (5), 32.10, (6) 41.36, (7) 47.22, and (8) 40.49. The mean annual precipitation for the period 1817 to 1870, inclusive, is 38.13 inches, and that for the period 1871 to 1903, inclusive, is 43.34 inches.

SUMMARY AND CONCLUSIONS.

In the data given above there is little that suggests a positive answer to the question which forms the subject of this discussion. If local causes produce an increase in the temperature of the air in a city, it ought to be shown by a constantly increasing difference between the temperatures recorded in that city and those obtained outside in the country, a fact not apparent in the comparison of the data for Boston and Blue Hill. Moreover, if the temperature within a city is rising it would be shown by an increase in the mean annual temperatures, a condition not found in the long series of temperature observations for Boston, Baltimore, and Paris. The fact that city temperatures are usually higher than those recorded outside in the country districts is probably explained by the differences in the controls referred to in the preceding discussion, and can hardly be due to the effects of heat evolved by the city, as the greatly diminished amount of heat thus lost in summer has no apparent effect upon the differences in temperature. In regard to the frequencies of certain fixed temperatures the data are more or less conflicting. Precipitation, when Boston and Blue Hill are compared, shows little to support the idea of changing climate in the city. The conclusion must therefore be that judging from the evidence available the heat generated by great cities is not changing their climates in any appreciable degree.

TABLE I.—*The mean annual temperatures of Boston and Blue Hill compared.*

Year	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880
Boston	48.9	48.8	48.2	48.6	46.6	47.9	50.1	50.2	48.4	50.3
Blue Hill	45.0	44.2	44.0	44.7	42.9	45.5	47.1	47.0	45.6	47.1
Difference	3.9	4.6	4.2	3.9	3.7	2.4	3.0	3.2	2.8	3.2
Year	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890
Boston	49.6	48.8	47.9	49.0	47.6	48.4	48.5	47.3	50.7	49.1
Blue Hill	45.8	45.2	44.2	46.3	45.1	46.2	46.1	44.4	47.7	46.3
Difference	3.8	3.6	3.7	2.7	2.5	2.2	2.4	2.9	3.0	2.8
Year	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Boston	50.4	49.4	47.9	50.3	49.8	49.2	49.9	50.8	50.2	50.8
Blue Hill	47.9	46.7	45.6	48.0	47.2	46.8	47.3	48.2	47.5	48.6
Difference	2.5	2.7	2.3	2.3	2.6	2.4	2.6	2.6	2.7	2.2
Year	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
Boston	49.0	49.6	49.5	47.1	49.1	50.0	48.7	51.2	50.6	50.8
Blue Hill	46.7	47.5	47.3	44.7	46.5	47.7	45.6	48.7	47.5	48.0
Difference	2.3	2.1	2.2	2.4	2.6	2.3	3.1	2.5	3.1	2.8

TABLE II.—*Relatively warm and relatively cold months in Boston.*

WARM MONTHS.

Month.	Departure.	Year.
January	6° or more	1880, 1889, 1906.
February	6° or more	1877.
March	6° or more	1871, 1894, 1898, 1902, 1903, 1910.
April	5° or more	1910.
May	4° or more	1880.
June	4° or more	1883, 1892, 1899, 1908.
July	3° or more	1872, 1887, 1910.
August	3° or more	1872, 1898.
September	4° or more	1881, 1884, 1891.
October	4° or more	1879, 1900.
November	4° or more	1889, 1895, 1896, 1900, 1902, 1905.
December	5° or more	1877, 1881, 1889, 1891, 1895, 1899, 1907.

COLD MONTHS.

Month.	Departure.	Year.
January	6° or more	1875, 1888, 1893.
February	6° or more	1875, 1885, 1907.
March	6° or more	1872, 1885.
April	5° or more	1874.
May	4° or more	1882, 1885, 1888, 1907.
June	4° or more	1881, 1897, 1903.
July	3° or more	1884, 1888, 1889, 1891, 1895, 1902.
August	3° or more	1889, 1903.
September	4° or more	1871.
October	4° or more	1876, 1883, 1888, 1889.
November	4° or more	1871, 1873, 1875, 1901.
December	5° or more	1872, 1876, 1880, 1890, 1904.

TABLE III.—*The frequency of certain temperatures in Boston.*

Year.	Maximum, 32° or below.	Minimum, 32° or below.	Minimum, 0° or below.	Year.	Maximum, 32° or below.	Minimum, 32° or below.	Minimum, 0° or below.
1872–73	42	119	5	1891–92	27	94	0
1873–74	29	115	2	1892–93	38	120	2
1874–75	40	128	9	1893–94	35	96	5
1875–76	30	132	6	1894–95	36	120	2
1876–77	34	121	2	1895–96	40	110	4
1877–78	15	89	1	1896–97	31	100	0
1878–79	33	129	1	1897–98	19	90	0
1879–80	17	125	4	1898–99	34	98	6
1880–81	25	124	5	1899–1900	26	102	1
1881–82	17	114	3	1900–1901	34	103	2
1882–83	21	130	1	1901–2	36	96	0
1883–84	31	117	2	1902–3	25	80	4
1884–85	36	115	6	1903–4	41	132	6
1885–86	32	105	8	1904–5	48	128	0
1886–87	32	124	1	1905–6	21	98	1
1887–88	40	113	9	1906–7	40	110	4
1888–89	22	79	1	1907–8	22	100	2
1889–90	22	86	0	1908–9	19	101	0
1890–91	35	108	1				

TABLE IV.—*The annual precipitation at Boston and at Blue Hill compared.*

Year	1871	1872	1873	1874	1875	1876	1877	1878
Boston	45.06	50.23	54.53	43.52	50.15	48.96	51.49	65.53
Blue Hill	.....	.....	.....	.....	.....	.....	.....	.....
Difference	.....	.....	.....	.....	.....	.....	.....	.....
Year	1879	1880	1881	1882	1883	1884	1885	1886
Boston	44.57	37.30	52.63	43.82	35.48	48.98	45.10	42.14
Blue Hill	.....	.....	.....	.....	.....	.....	.....	46.99
Difference	.....	.....	.....	.....	.....	.....	.....	4.85
Year	1887	1888	1889	1890	1891	1892	1893	1894
Boston	33.75	45.89	39.82	39.14	39.70	37.02	41.84	36.62
Blue Hill	43.72	55.84	54.60	50.79	50.27	39.73	45.08	38.24
Difference	9.97	9.95	14.78	11.65	10.57	2.71	3.24	1.62
Year	1895	1896	1897	1898	1899	1900	1901	1902
Boston	40.17	37.55	40.77	49.86	34.69	44.05	48.72	33.93
Blue Hill	46.19	47.44	45.40	58.69	40.67	48.14	54.01	42.71
Difference	6.02	9.89	4.63	8.83	5.98	4.09	5.29	8.78
Year	1903	1904	1905	1906	1907	1908	1909	1910
Boston	41.97	39.64	32.08	40.69	37.56	30.07	40.67	28.33
Blue Hill	46.76	46.19	39.45	45.53	47.57	37.58	43.29	34.27
Difference	4.79	6.55	7.37	4.84	10.01	7.51	2.62	5.94

WEATHER, FORECASTS, AND WARNINGS.

By H. C. FRANKENFIELD, Professor of Meteorology.

At the beginning of the month, and continuing for several days, barometric pressure was moderately low over the great central valleys and the lake region, and in consequence frequent showers occurred over practically all districts from the Rocky Mountains to the Atlantic coast, with general and heavy rains over the Plains States, the lower Mississippi Valley, and in the Atlantic States from Pennsylvania to Florida. In the last-named districts the rains afforded permanent relief from the drought that had existed for a prolonged period, especially in the Carolinas, Virginia, and southern Maryland. The temperature during the first week of the month averaged near or below the normal as a rule, except in Texas, the Lake region, and the upper Ohio Valley, where there were several warm days. However, no extremely high temperatures prevailed in any part of the country.

On August 6 the following weekly forecast was issued:

The distribution of atmospheric pressure, as shown by the weather chart of the Northern Hemisphere, is such as to indicate that there will be no unseasonably warm weather in any part of the country during the coming week, and temperatures will average near or below the normal generally. The precipitation during the week will be local, but fairly well distributed over the greater part of the country from the Rocky Mountains to the Atlantic coast. The principal barometric depression to cross the country during the week is now forming over the western Plateau region; it will cross the Middle West about Wednesday, and the Eastern States Friday or Saturday.

During the first half of the second week of the month a low area moved east-northeastward from the Rocky Mountains to the lower St. Lawrence Valley, and it was followed by a high area from the Northwest that reached the Atlantic coast on August 10. At the same time comparatively low pressure continued over the Central West, and the result was a week of unsettled weather over the northern half of the country east of the Rocky Mountains with frequent thunderstorms. Dry weather continued in the southwestern portion of the country except along the mountain slopes, while in the East Gulf and South Atlantic States thundershowers were of daily occurrence, except along the south Atlantic coast. During the afternoon of August 11 a severe storm of very limited area touched the Gulf coast near Pensacola and Mobile Bay, causing high winds in that immediate vicinity, with some minor damage to shipping, etc., at Pensacola. At this place the wind reached a velocity of 80 miles from the southeast early in the evening of August 11, while at Mobile the highest velocity was but 34 miles an hour, indicating the local character of the storm, which dissipated a short distance in the interior during the morning of August 12.

There was a moderate cool wave over the northwestern districts during the early days of the week, reaching the Lake region during Thursday and Friday, August 10 and 11, but with these exceptions high temperatures prevailed east of the Rocky Mountains, with readings above 100° of frequent occurrence, except in the South Atlantic and east Gulf States, where the showers prevented any extreme heat. West of the Rocky Mountains the weather was fair and cool, except in the interior of the extreme Southwest, where temperatures were high.

On August 13 the following weekly forecast was issued:

The distribution of atmospheric pressure over the Northern Hemisphere is such as to indicate that moderately high temperatures will prevail the first half of the week in the Middle West and until the last of the week in the Eastern States; in the Southern States and on the Pacific slope normal temperatures are probable. A change to lower temperature will overspread the Northwestern States Tuesday and Wednesday, the Middle West Wednesday or Thursday, and the Eastern States by the last of the week. The principal barometric disturbance to cross the country during the week is now over the far Northwest. It will move eastward over the Middle West about Wednesday, and reach the Eastern States about Friday. It will be preceded and attended by considerable cloudiness and local showers and thunderstorms.

There were no pronounced barometric phenomena during the week, except over New England. A very moderate depression from extreme northern Illinois, after reaching the New England coast, developed into a pronounced disturbance during the night of August 15–16, but fortunately without high winds, so far as reports indicated. There was also a marked redevelopment of a disturbance in the same locality during the night of August 18–19, again without high winds. Both of the disturbances moved off to the northeastward, and the moderate high area following the second one brought with it a sharp temperature fall over the eastern portion of the country, the cool weather continuing for several days.

Only scattered showers occurred west of the Mississippi River, although over portions of the lower Mississippi Valley and the west Gulf States they were heavy at times, and the precipitation for the week was in excess of the normal amount. There were heavy thunderstorms on the 15th over the northeastern districts and good showers again on the 18th, so that the total precipitation for the week was somewhat in excess of the average. There were also frequent showers in the South Atlantic and east Gulf States.

At the beginning of the week temperatures were quite high east of the Rocky Mountains, but about the middle of the week a moderately high pressure area from the Northwest moved eastward, and by Saturday, August 19, comparatively cool weather prevailed over the northern districts from the Rocky Mountains to New England. In the central Plains States and the Southwest high temperatures continued. West of the Rocky Mountains the week was cooler, with generally fair weather, except over the extreme southern districts, where the temperatures were high.

On Sunday, August 20, the following bulletin was issued:

Fair weather with moderate temperature will continue Monday and Tuesday in the lower Lake region, the Middle Atlantic States, and New England. A disturbance now over the Northwest will move eastward, preceded and attended by showers and rising temperature that will cover the Northwest and the central Plains States Monday and Tuesday, with showers continuing Tuesday in the latter district; the Missouri and upper Mississippi Valleys and the upper Lake region by Tuesday, reaching the Middle Atlantic States and New England Wednesday and Thursday. The disturbance will be followed by a high area now on the north Pacific coast, bringing with it falling temperatures that will reach the Northwestern States Monday and Monday night, the great central valleys and the upper Lake region Tuesday or Wednesday, and the eastern portion of the country Thursday and Friday. Generally fair weather will prevail after Wednesday in the

central West, and after Tuesday in the extreme West, except in the central and southern Rocky Mountain region, where local showers are probable. In the South Atlantic and east Gulf States local showers will continue, while in the west Gulf States the weather will be generally fair. Another low area will probably appear in the British Northwest toward the end of the week, attended by rising temperature in the Northwestern States.

Subsequent conditions were in accordance with the forecast, except that showers continued locally in the Plains States and the Northwest during the middle of the week and were of frequent occurrence in eastern Texas during the second half of the week. The northwestern high-pressure area was accompanied by a decided drop in temperature, and frosts occurred quite generally in the Northwestern States and Wyoming from August 23 to 28, inclusive. Heavy to killing frosts occurred on August 27 and 28, and on August 29 light frosts occurred in northern Wisconsin and the Lake Superior region.

The feature of the week was a hurricane that, as closely as could be conjectured from later reports, originated in the Atlantic Ocean about August 23 at about latitude 24° and longitude 67° 30′. The first definite indications of its approach toward the coast were noted on Sunday morning August 27, at Charleston, S. C., when the barometer read 29.82 inches, a fall of 0.14 inch in 12 hours, with a wind velocity of 22 miles an hour from the North. At the same time the barometer at Savannah, Ga., read 29.90 inches, a fall of 0.04 inch in 12 hours, with a wind velocity of 20 miles an hour from the Northwest. Advisory warnings were sent at once to these places, and special observations called for. At 11 a. m. storm warnings were ordered from Fort Monroe to Savannah, and all coast stations from Boston to New Orleans and the meteorological offices at Habana, Cuba, notified accordingly. Later special observations indicated that the storm would be a severe one, and hurricane warnings were ordered at 3.45 p. m. for Charleston and Savannah, and northwest storm warnings ordered at Jacksonville, Fla. The storm center apparently moved very slowly in a west-northwest direction, and it was not until 8 a. m., Monday, August 28, that it reached the coast at a point a short distance north of Savannah.

The lowest barometer readings were as follows: Charleston, 29.30 inches, at 11.50 p. m., August 27, and Savannah, 29.02 inches, at 8 a. m., August 28. The highest wind velocity at Charleston was about 106 miles an hour from the northeast at 11.50 p. m., August 27, and at Savannah, 88 miles from the northwest at 3.10 a. m., August 28, with an extreme velocity of 96 miles an hour at 3.08 a. m The storm path was of limited width, and no high winds were reported north of Wilmington, N. C., or south of Jacksonville, Fla. At Wilmington the wind attained a velocity of 30 miles an hour from the east early in the afternoon of Sunday, August 27, and at Jacksonville 48 miles an hour from the northwest early in the afternoon of Monday, August 28. Great damage was caused by the winds and high tides between Charleston and Savannah, and the loss of seven lives was reported. More detailed accounts of the storm will be found in the report of the district editor in another portion of this Review and also in the special bulletin immediately following.

The storm began to diminish in intensity after reaching the coast, and in the interior of the State of Georgia recurved to the northeastward and passed to sea off the New Jersey coast. The storm was followed by a cold high area from the northwest and strong northeast to east winds and general rains set in along the Atlantic coast from Nantucket to Hatteras, with cool weather prevailing over the eastern half of the country.

On Sunday, August 28, the following special bulletin was issued:

A barometric depression that is central over the Mississippi Valley and another that is off the south Atlantic coast will move toward New England and be attended by general rains within the next 48 hours over the greater part of the country from the Mississippi Valley to the Atlantic coast and in the Southwest. It is probable that strong winds will prevail off the Atlantic coast. Following the passage of these disturbances the pressure will rise rapidly and a change to considerably cooler weather will overspread the Great Central Valleys and the Lake region Monday and Monday night and the eastern and southern States Tuesday and Wednesday. This change to cooler weather will probably cause frosts in exposed places the first part of the week in the northern Rocky Mountain region, the northern plains States, the extreme upper Mississippi Valley, and the upper lake region. Another disturbance is due to appear in the northwest about Wednesday, whence it will move eastward and cross the Middle West Thursday or Friday and the Eastern States near the close of the week; this disturbance will be preceded by a reaction to warmer weather and be attended by considerable cloudiness and local areas of precipitation in the region east of the Rocky Mountains.

INTERNATIONAL PRESSURE.

Except on one or two days pressure was high over Alaska until August 24, when a period of moderately low pressure set in, continuing until the end of the month. Over the Atlantic Ocean pressure was variable within narrow limits, and nearly normal except from August 19 to 22, inclusive, when it was low over the Azores, and after August 21 when high pressure prevailed over the islands of Bermuda.

Nothing unusual developed in the West Indies. Over Iceland and the British Isles marked low pressure and storm conditions prevailed from August 4 to 8, inclusive, followed by a reaction to abnormally high pressure (30.40 inches), and a gradual decrease after August 15. From August 24 to 29, inclusive, pressure was again low over the British Isles, but nearly normal over Iceland until the last day of the month, when there was a very rapid fall of 0.9 inch to 28.84 inches, the fall extending over the extreme northeast Atlantic Ocean and the northern portion of the British Isles.

Over continental Europe high pressure prevailed during the first half of the month except over the extreme southern portion, followed then by a fall that was most marked over Russia from August 15 to 21, inclusive. There was a gradual recovery to more normal conditions after August 21. Over Siberia pressure was variable within a moderately wide range, with a well-defined low period from August 11 to 16, inclusive, and a lesser one about the middle of the first decade of the month. During the second half of the month the tendency was toward conditions somewhat above the normal.

On the Asiatic coast pressure was also variable, but within narrow limits, except for a pronounced depression on August 11 in the Yellow Sea. Over the Philippines pressure was above normal as a rule, but well marked depressions were noted on August 1, 10, and 25. Over the Sandwich Islands moderately low pressure prevailed.

Average temperature and departure from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures, current month.	Accumulated since Jan. 1.	Average since Jan. 1.
New England	12	67.3	+0.2	+ 4.7	+0.6
Middle Atlantic	15	73.7	+1.1	+ 7.9	+1.0
South Atlantic	10	79.0	+1.2	+12.9	+1.6
Florida Peninsula [1]	8	80.7	−0.4	+10.7	+1.3
East Gulf	11	79.6	+0.4	+19.0	+2.4
West Gulf	10	81.8	+1.0	+22.7	+2.6
Ohio Valley and Tennessee	13	75.5	+0.7	+16.7	+2.1
Lower Lakes	10	70.1	+0.6	+13.1	+1.6
Upper Lakes	12	65.7	−0.3	+21.4	+2.7
North Dakota [1]	9	66.2	−4.0	+ 0.4	0.0
Upper Mississippi Valley	14	71.9	−0.9	+22.1	+2.8
Missouri Valley	12	73.0	−0.7	+26.8	+3.4
Northern Slope	9	63.6	−3.2	+ 3.8	+0.5
Middle slope	6	75.2	0.0	+23.0	+2.9
Southern slope [1]	8	81.3	+1.5	+25.1	+3.1
Southern Plateau [1]	10	78.2	+0.3	− 0.3	0.0
Middle Plateau [1]	10	68.5	−1.0	+ 3.6	+0.4
Northern Plateau [1]	11	66.2	−1.2	− 2.9	−0.4
North Pacific	7	60.6	−0.5	− 9.2	−1.2
Middle Pacific	5	64.0	−2.7	−10.7	−1.3
South Pacific	4	69.6	−1.0	− 0.6	−0.1

[1] Regular Weather Bureau and selected cooperative stations.

Average precipitation and departure from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
New England	11	5.05	131	+1.2	− 3.8
Middle Atlantic	15	7.63	176	+3.3	− 4.1
South Atlantic	11	7.06	115	+0.9	−14.6
Florida Peninsula [1]	8	8.09	114	+1.0	− 9.2
East Gulf	11	4.70	96	−0.2	− 5.2
West Gulf	10	4.19	140	+1.2	− 4.2
Ohio Valley and Tennessee	13	4.43	129	+1.0	− 3.2
Lower Lakes	10	3.93	130	+0.9	− 1.1
Upper Lakes	13	2.18	73	−0.8	− 1.5
North Dakota [1]	9	3.38	155	+1.2	+ 0.2
Upper Mississippi Valley	15	3.84	119	+0.6	− 3.9
Missouri Valley	12	3.32	103	+0.1	− 6.6
Northern Slope	9	1.40	108	+0.1	− 2.1
Middle slope	6	2.45	100	0.0	− 3.7
Southern slope [1]	8	1.44	62	−0.9	− 3.7
Southern Plateau [1]	10	0.72	51	−0.7	+ 2.0
Middle Plateau [1]	11	0.60	60	−0.4	+ 0.4
Northern Plateau [1]	11	0.48	100	0.0	− 2.3
North Pacific	7	0.23	28	−0.6	+ 6.7
Middle Pacific	8	0.01	100	0.0	+ 3.5
South Pacific	4	0.00	100	0.0	+ 7.4

[1] Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	81	− 1	Missouri Valley	67	0
Middle Atlantic	77	+ 1	Northern slope	61	+ 9
South Atlantic	81	− 1	Middle slope	61	+ 2
Florida Peninsula	79	0	Southern slope	58	− 3
East Gulf	82	+ 2	Southern Plateau	43	+ 1
West Gulf	73	− 2	Middle Plateau	36	+ 3
Ohio Valley and Tennessee	74	+ 2	Northern Plateau	38	− 5
Lower Lakes	73	+ 2	North Pacific	75	+ 8
Upper Lakes	75	0	Middle Pacific	63	− 4
North Dakota	74	+10	South Pacific	64	− 2
Upper Mississippi Valley	72	+ 2			

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	5.8	+0.8	Missouri Valley	4.1	0.0
Middle Atlantic	5.4	+0.3	Northern slope	4.5	+0.6
South Atlantic	5.4	+0.2	Middle slope	3.9	+0.1
Florida Peninsula	5.8	+0.4	Southern slope	3.5	+0.4
East Gulf	6.0	+0.8	Southern Plateau	2.5	−1.2
West Gulf	4.1	+0.1	Middle Plateau	2.2	−1.1
Ohio Valley and Tennessee	5.8	+1.3	Northern Plateau	2.5	+0.2
Lower Lakes	5.4	+0.8	North Pacific	5.2	+0.6
Upper Lakes	5.1	+0.4	Middle Pacific	3.8	+0.2
North Dakota	5.2	+1.2	South Pacific	1.8	+1.0
Upper Mississippi Valley	5.0	+0.8			

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Cape Henry, Va	18	58	ne.	Pensacola, Fla	11	80	se.
Charleston, S. C	27	94	e.	Do	12	56	s.
Do	28	58	se.	Point Reyes Light, Cal	1	62	nw.
Columbus, Ohio	17	60	w.	Do	2	52	nw.
Devils Lake, S. Dak	13	53	w.	Do	8	54	nw.
El Paso, Tex	22	50	sw.	Do	16	62	nw.
Marquette, Mich	21	56	s.	Do	17	60	nw.
Mount Tamalpais, Cal	7	55	nw.	Do	18	54	nw.
Do	16	51	nw.	Do	19	62	nw.
Do	17	56	nw.	Savannah, Ga	27	62	nw.
New York, N. Y	15	55	nw.	Do	28	88	nw.
Do	18	64	nw.	Walla Walla, Wash	14	50	sw.
Oklahoma, Okla	4	60	w.	Williston, N. Dak	13	59	nw.
Pensacola, Fla	10	58	se.				

RIVERS AND FLOODS.

By H. C. FRANKENFIELD, Professor of Meteorology.

Near the end of the month the upper portion of the Trinity River, Tex., was in flood, with a crest stage of 21.1 feet, 6.1 feet above the flood stage, at Bridgeport, on the 28th; and at Dallas the crest stage was 25.5 feet, 0.5 foot above the flood stage, on the 31st. But little damage was reported.

Heavy rains during the first week of August caused a sudden rise in the Neosho River and in the Arkansas below Tulsa, Okla., but flood stages were not reached, except at Fort Gibson, Okla., on the Neosho, and the smaller tributaries. The crest stage at Fort Gibson was 25 feet, 3 feet above the flood stage, on the 6th and 7th. Due warnings were issued for this flood, and property valued at $21,000 was saved by timely notice. The principal damage was along the smaller streams. Damages to crops to the extent of $12,000 and to railroads and other property to the extent of $130,000 were reported. On the 15th the White River at Calico Rock, Ark., rose 21.8 feet in 24 hours to a stage of 25.6 feet, 7.6 feet above the flood stage, and at Batesville, Ark., the flood was 28.4 feet, 10.4 feet above the flood stage, on the 16th. At Black Rock, Ark., on the Black River, the crest stage was 19 feet, 5 feet above the flood stage, on the 16th. The losses caused by this flood were confined to the crops in the lowlands and amounted to several thousand dollars. On the 24th a second rise occurred in the White River, a crest stage of 18.9 feet being reached at Batesville, Ark.

At the end of the month high waters prevailed in the rivers of western Pennsylvania and in the upper Potomac but flood stages were not reached. The high waters were of great benefit to river men on the upper Ohio River, as they were enabled to move thousands of tons of coal that had been waiting shipment.

On the morning of the 30th, 9.37 inches of rain fell at Lumber City, Ga., and caused the Ocmulgee River at that place to rise 16.5 feet in 48 hours to a crest stage of 17.2 feet, 2.2 feet above the flood stage, on the 31st. Bridges were swept away, and other property, including crops, damaged to the extent of about $20,000.

Hydrographs for typical points on several principal rivers are shown on chart 1. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Anonymous publications are indicated by a ——.

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Emery, Samuel C.
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RECENT PAPERS BEARING ON METEOROLOGY.

C. FITZHUGH TALMAN, Librarian.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. These titles are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a ——.

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CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given, for the various sections of the Climatological Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting the greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have 10 or more years of observations. Of course the number of such records is smaller than the total number of stations.

Temperature and precipitation by sections, August, 1911.

Section.	Temperature—in degrees Fahrenheit.								Precipitation—in inches and hundredths.					
	Section average.	Departure from the normal.	Monthly extremes.						Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.			Station.	Amount.	Station.	Amount.
Alabama	79.1	−0.6	2 stations	102	8†	2 stations	54	29†	4.97	+0.39	Spring Hill	10.60	Tuscaloosa	2.06
Arizona	79.6	−0.3	Mohawk Summit	120	8	Flagstaff (2)	35	5	1.69	−0.53	Jerome	5.32	5 stations	0.00
Arkansas	78.0	−1.6	Arkadelphia	107	9	Bergman	45	30†	8.19	+4.37	Dodd City	19.54	Rogers	3.02
California	70.1	−2.0	3 stations	114	19†	Sierraville	28	15	0.00	−0.07	Eureka	0.08	Many stations	0.00
Colorado	63.4	−1.0	2 stations	107	20†	Fraser	20	26	1.89	−0.09	Cope	6.31	Grand Junction	0.35
Florida	80.7	−0.5	2 stations	100	7†	2 stations	60	1†	9.01	+1.20	Macclenny	17.73	New Smyrna	3.31
Georgia	79.4	+0.1	Blakely	105	7	Mineral Bluff	51	21	6.18	+0.58	St. George	24.17	Gore	1.71
Hawaii (July)	73.3	.....	Melokai Ranch	94	25	Humwula	39	14	4.59	.....	Hakalau (Mauka)	21.02	2 stations	0.00
Idaho	64.4	−2.6	2 stations	103	17	Chesterfield	22	25	0.24	−0.34	Wallace	2.70	28 stations	0.00
Illinois	73.2	−0.6	St. Peter	104	16	2 stations	40	29	4.22	+1.01	Lanark	12.19	2 stations	1.29
Indiana	73.6	+0.4	Rome	107	10	3 stations	42	29†	3.23	−0.05	Vevay	7.50	Farmersburg	0.72
Iowa	71.9	+0.1	Bedford	107	15	Larrabee	34	28	3.25	−0.74	Ridgeway	9.47	Chariton	0.44
Kansas	76.3	−1.0	Hugoton	114	20	2 stations	39	28	3.63	+0.48	Smith Center	8.00	Wallace	0.90
Kentucky	76.2	+0.5	Bardstown	106	11	2 stations	45	21	4.03	+0.69	Franklin	6.71	Shelby City	1.84
Louisiana	81.5	−0.1	Liberty Hill	106	9	Grand Cane	49	31	8.01	+3.63	Donaldsonville	28.50	Simmes Port	2.57
Maryland and Delaware.	74.7	+1.5	Green Spg. Furnace, Md.	104	11	Deer Park, Md.	37	20	9.95	+6.00	Fallston, Md.	15.63	Pocomoke City, Md.	3.89
Michigan	66.4	+0.1	Kalamazoo	99	18	Thomaston	29	29	2.69	−0.16	Iron Mountain	6.57	Stanton	0.16
Minnesota	64.0	−2.5	2 stations	95	15	3 stations	29	23†	4.27	+0.92	Grand Meadow	13.34	Bagley	1.84
Mississippi	79.7	−0.8	Greenwood	103	9	Hernando	55	30	6.38	+1.55	Greenville	13.20	Vicksburg	2.86
Missouri	75.4	−0.6	3 stations	109	9†	Steelville	41	30	4.20	+0.82	Mt. Vernon	12.04	Gorin	1.39
Montana	60.5	−3.4	Bridger	100	12†	Bowen	16	25	1.80	+0.68	Utica	5.37	Missoula	0.43
Nebraska	70.7	−2.0	Weepingwater	109	10†	Canton (near)	29	24	3.49	+0.52	Alma	11.73	2 stations	0.71
Nevada	67.3	−2.7	Logan	110	16†	Cobre	27	28	0.01	−0.54	Rebel Creek	0.23	29 stations	0.00
New England	66.9	−0.3	Framingham, Mass.	97	10	Presque Isle, Me.	34	31	4.86	+1.14	Block Island, R. I.	9.79	Bar Harbor, Me.	1.90
New Jersey	72.1	+0.3	2 stations	101	11	Layton	39	20†	8.91	+4.29	Tuckerton	14.74	Phillipsburg	5.31
New Mexico	70.7	+0.1	2 stations	106	2†	2 stations	28	4†	1.81	−0.82	San Jon	5.84	Columbus	0.09
New York	68.1	+1.4	2 stations	99	1†	3 stations	34	20†	4.62	+1.09	Cutchogue	10.02	Ticonderoga	1.09
North Carolina	76.8	+1.1	Kings Mountain	107	17	Banners Elk	42	20	6.27	+0.25	Wilmington	13.85	Belhaven	1.88
North Dakota	62.2	−3.3	2 stations	98	13†	Marstonmoor	23	27	3.55	+1.23	Jamestown	6.72	Pembina	1.21
Ohio	72.5	+1.0	2 stations	104	10	Peebles	34	21	5.39	+2.25	Sidney	9.24	Defiance	2.49
Oklahoma	79.6	−1.2	Healdton	111	20	Jefferson	45	29	3.91	+1.30	Healdton	10.05	Mangum	0.36
Oregon	64.9	−0.6	Blalock	104	19	2 stations	24	20†	0.14	−0.41	Sisters	0.82	44 stations	0.00
Pennsylvania	71.4	+1.8	3 stations	102	8†	Pocono Lake	36	21	7.63	+3.67	Kennett Square	15.14	Lloyd	2.60
Porto Rico	79.1	+0.2	2 stations	96	9†	Toro Negro Dam	59	17	4.98	−2.72	Maricao	14.92	Santa Isabel	0.82
South Carolina	80.0	+1.2	Dillon	104	17	Darlington	51	22	6.05	−0.50	Georgetown	13.01	Anderson	1.76
South Dakota	67.1	−2.8	Kennebec	107	15	Camp Crook	27	28	3.37	+0.84	Sioux Falls	8.07	Edson	1.67
Tennessee	76.5	−0.3	Union City	105	8	Erasmus	45	21	4.53	+0.98	Jackson	9.24	Dandridge	1.10
Texas	84.1	+1.6	Bonham	112	22	Dalhart	49	28†	2.07	−0.34	San Angelo	7.31	8 stations	0.00
Utah	70.1	−0.5	Corinne	110	17	2 stations	24	26†	0.30	−0.62	Monticello	2.24	20 stations	None.
Virginia	75.5	+1.7	Lincoln	102	11	Burkes Garden	40	20	6.14	+1.54	Mt. Weather	11.48	Mendota	2.29
Washington	64.9	−1.1	Kennewick	104	17	Newport	33	24	0.64	−0.09	Sedro-Woolley	2.96	2 stations	0.00
West Virginia	73.5	+2.3	3 stations	105	10†	Bayard	40	20†	6.71	+3.19	Terra Alta	12.14	2 stations	2.38
Wisconsin	65.7	−1.4	5 stations	94	6†	Prentice	26	29	3.85	+0.48	Shullsburg	10.12	Downing	1.44
Wyoming	59.7	−1.7	Moorcroft	108	14	3 stations	19	23†	0.73	−0.41	Newcastle	3.69	4 stations	0.00

† Other dates also.

TABLE I.—*Climatological data for U. S. Weather Bureau stations, August, 1911.*

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Precipitation, inches.			Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.						
New England.							**67.3**	**+ 0.2**											**81**	**5.05**	**+ 1.2**								**5.8**		
Eastport	76	67	85	29.92	30.00	+ .04	62.0	+ 2.3	83	10	70	50	28	54	25	58	55	82	2.53	− 0.7	7	5,617	s.	34	e.	31	9	13	9	5.7	.....	.....
Greenville	1 070	6	.....	28.87	30.02	.....	62.8	.....	82	1	73	41	31	53	32	.....	.....	.....	4.06	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me.	103	81	117	29.91	30.03	+ .05	64.6	− 1.6	86	23	72	51	20	57	28	59	55	75	2.56	− 1.0	11	5,475	s.	28	nw.	16	7	10	14	6.0	.....	.....
Concord	288	70	79	29.72	30.02	+ .04	66.4	− 0.2	92	10	78	44	21	55	36	.....	.....	.....	4.24	+ 0.5	10	3,138	se.	21	nw.	16	9	13	9	6.0	.....	.....
Burlington	404	11	48	29.57	30.00	+ .03	68.4	+ 2.3	92	1	79	47	31	58	34	.....	.....	.....	3.83	− 0.2	10	7,427	s.	39	s.	22	11	8	12	5.7	.....	.....
Northfield	876	16	60	29.10	30.03	+ .05	63.4	+ 0.5	88	1	75	40	31	52	36	59	57	82	4.46	+ 0.5	10	4,667	s.	27	s.	8	11	6	14	6.2	.....	.....
Boston	125	115	188	29.90	30.03	+ .04	69.0	+ 0.1	92	10	76	55	31	62	27	63	60	78	4.17	+ 0.1	9	6,266	e	32	nw.	19	12	5	14	5.7	.....	.....
Nantucket	12	14	90	30.02	30.03	+ .04	67.4	− 0.6	85	1	74	54	31	61	25	64	63	92	8.03	+ 5.0	12	9,342	sw.	36	w.	18	11	11	9	5.7	.....	.....
Block Island	26	11	46	29.99	30.02	+ .03	68.3	− 0.4	84	10	73	56	31	63	17	66	65	91	9.79	+ 6.3	10	9,480	sw.	49	w.	18	13	5	13	5.6	.....	.....
Narragansett	.....	9	.....	.....	.....	.....	67.9	− 0.6	87	1	76	52	21	60	25	.....	.....	.....	7.43	.....	11	.....	sw.	.....	.....	.....	19	3	9	.....	.....	.....
Providence	160	141	165	29.87	30.04	+ .05	69.4	− 1.6	90	23	78	54	20	61	32	64	62	83	4.86	+ 0.8	10	5,829	nw.	30	nw.	19	10	10	11	5.7	.....	.....
Hartford	159	122	140	29.86	30.03	+ .04	70.4	+ 1.5	94	10	80	49	21	61	31	63	59	74	5.56	+ 1.0	10	4,803	s.	25	sw.	15	7	11	13	6.4	.....	.....
New Haven	106	116	155	29.91	30.02	+ .03	70.2	+ 0.1	90	1	78	53	31	62	28	64	60	75	5.57	+ 0.6	10	5,547	s.	27	nw.	19	12	10	9	4.9	.....	.....
Middle Atlantic States.							**73.7**	**+ 1.1**											**77**	**7.63**	**+ 3.3**								**5.4**		
Albany	97	102	115	29.91	30.01	+ .03	71.0	+ 1.5	95	10	81	50	21	61	33	63	59	65	4.53	+ 0.6	9	4,911	s.	33	nw.	18	14	9	8	4.7	.....	.....
Binghamton	871	78	88	29.11	30.02	+ .03	68.2	+ 0.7	92	10	78	42	21	58	39	.....	.....	.....	2.32	− 1.0	9	3,496	e.	22	sw.	28	5	7	19	7.3	.....	.....
New York	365	414	454	29.70	30.03	+ .03	71.8	− 0.4	92	11	78	54	30	65	24	65	62	75	7.38	+ 2.8	12	9,736	sw.	64	nw.	18	6	11	14	6.2	.....	.....
Harrisburg	374	94	104	29.64	30.03	+ .02	72.7	+ 0.6	94	11	81	54	21	65	27	66	63	75	9.73	+ 5.5	16	4,239	e.	31	nw.	18	7	7	17	6.3	.....	.....
Philadelphia	117	123	184	29.91	30.03	+ .03	74.5	+ 0.7	94	11	82	57	30	67	25	67	64	76	12.10	+ 7.5	14	6,171	se.	38	s.	15	10	7	14	5.9	.....	.....
Scranton	805	111	119	29.19	40.04	+ .04	70.0	+ 0.7	93	10	79	47	21	61	33	64	60	73	6.84	+ 2.6	18	4,095	n.	35	w.	18	7	10	14	6.4	.....	.....
Atlantic City	52	37	48	29.98	30.03	+ .03	73.6	+ 1.0	92	17	79	56	20	68	20	69	67	83	7.32	+ 3.0	12	5,638	s.	29	n.	11	12	11	8	5.0	.....	.....
Cape May	17	9	56	30.03	30.05	+ .05	74.7	+ 1.3	91	11	81	58	20	68	20	70	69	87	7.27	+ 3.0	12	5,494	s.	30	ne.	30	11	15	5	4.7	.....	.....
Baltimore	123	100	113	29.90	30.02	+ .01	76.2	+ 1.5	98	11	84	58	30	68	27	69	67	77	12.28	+ 8.1	15	4,868	s.	27	nw.	18	9	10	12	5.4	.....	.....
Washington	112	62	85	29.90	30.01	.00	76.6	+ 2.1	100	11	86	54	21	67	31	69	66	77	7.27	+ 2.9	16	4,161	s.	42	n.	11	10	11	10	5.0	.....	.....
Cape Henry	18	9	58	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lynchburg	681	83	88	29.30	30.02	.00	76.8	+ 2.0	98	11	87	56	22	67	34	69	67	78	5.73	+ 1.5	14	2,602	n.	23	nw.	13	11	17	3	4.6	.....	.....
Mount Weather	1,725	10	54	28.24	30.01	.00	70.9	+ 1.5	91	11	78	52	30	64	22	64	61	79	11.48	+ 7.9	14	9,049	se.	38	nw.	18	8	11	12	6.0	.....	.....
Norfolk	91	102	111	29.94	30.03	+ .03	78.8	+ 2.1	94	17	86	66	31	71	23	72	70	78	5.93	0.0	11	6,288	s.	34	nw.	9	13	14	4	4.3	.....	.....
Richmond	144	189	197	29.88	30.02	+ .01	77.6	+ 0.1	97	17	88	58	22	68	28	.....	.....	.....	7.26	+ 2.8	14	4,879	s.	42	s.	28	11	15	5	5.0	.....	.....
Wytheville	2,293	40	47	27.71	30.02	+ .01	71.8	+ 1.3	92	11	82	50	20	61	31	65	63	82	6.98	+ 2.4	17	2,355	w.	19	w.	7	15	14	2	3.5	.....	.....
South Atlantic States.							**79.0**	**+ 1.2**											**81**	**7.06**	**+ 0.9**								**5.4**		
Asheville	2,255	53	75	27.74	30.03	+ .01	71.8	+ 1.3	88	11	82	55	23	62	28	65	63	84	8.63	+ 3.8	18	4,292	nw.	38	n.	18	8	13	10	5.9	.....	.....
Charlotte	773	68	76	29.21	30.02	.00	79.0	+ 2.4	97	9	89	62	22	69	28	70	67	75	6.20	+ 0.6	13	4,140	se.	32	se.	13	10	13	8	5.5	.....	.....
Hatteras	11	12	47	30.02	30.03	+ .03	79.6	+ 1.4	91	16	85	63	21	74	15	74	72	80	3.61	− 2.2	10	8,562	sw.	38	sw.	31	18	12	1	3.5	.....	.....
Manteo	12	12	46	.....	.....	.....	78.7	.....	98	12	87	60	20	70	.....	.....	.....	.....	4.25	− 1.7	9	.....	sw.	.....	.....	.....	16	10	5	.....	.....	.....
Raleigh	376	103	110	29.63	30.01	.00	78.8	+ 2.0	96	17	88	60	22	69	25	71	68	78	7.36	+ 1.5	11	4,975	sw.	33	w.	30	9	16	6	5.1	.....	.....
Wilmington	78	81	91	29.94	30.02	+ .02	79.1	+ 1.5	94	17	87	65	22	72	23	74	72	85	13.85	+ 7.3	12	5,766	s.	32	ne.	14	8	16	7	5.0	.....	.....
Charleston	48	11	92	29.95	30.00	− .01	80.8	+ 0.5	94	16	87	68	22	75	18	75	73	82	7.52	+ 0.6	9	8,768	se.	94	e.	27	9	20	2	4.8	.....	.....
Columbia, S. C.	351	41	57	29.64	30.01	.00	79.8	+ 0.3	96	17	89	63	21	70	26	72	69	79	6.03	− 0.8	16	4,751	sw.	28	e.	28	3	18	10	6.4	.....	.....
Augusta	180	89	97	29.81	30.00	− .01	80.4	+ 1.5	96	17	89	65	21	72	23	72	70	79	4.27	− 1.3	13	4,548	se.	35	ne.	28	5	17	9	6.0	.....	.....
Savannah	65	150	194	29.92	29.99	− .02	80.0	+ 0.6	94	17	88	66	21	72	22	74	73	84	5.77	− 1.7	15	8,460	s.	88	nw.	28	3	18	10	6.2	.....	.....
Jacksonville	43	96	129	29.96	30.01	.00	80.6	+ 0.5	92	7	88	69	23	73	20	75	74	86	10.16	+ 4.0	18	6,534	sw.	48	sw.	28	9	9	13	6.0	.....	.....
Florida Peninsula.							**81.7**	**0.0**											**79**	**7.06**	**+ 0.6**								**5.8**		
Key West	22	10	53	29.97	29.99	+ .01	82.0	− 1.8	90	6	88	70	13	76	17	76	74	76	7.89	+ 3.2	13	6,018	ne.	31	s.	9	9	15	7	5.3	.....	.....
Miami	25	37	72	29.98	30.02	.....	82.2	+ 0.2	93	26	89	67	14	75	20	76	73	76	6.27	− 1.3	15	5,699	se.	28	se.	10	6	9	16	6.2	.....	.....
Tampa	35	79	96	29.97	30.00	.00	80.8	+ 0.8	93	25	88	66	22	73	23	75	74	86	6.71	− 1.9	16	5,003	ne.	27	nw.	23	7	15	9	5.8	.....	.....
Titusville	.....	.....	.....	29.96	30.01	.....	81.8	+ 0.8	97	18	90	68	22	73	27	.....	.....	.....	7.35	+ 2.5	19	.....	se.	.....	.....	.....	7	15	9	5.4	.....	.....
East Gulf States.							**79.6**	**+ 0.4**											**82**	**4.70**	**− 0.2**								**6.0**		
Atlanta	1,174	190	216	28.80	30.01	.00	77.3	+ 1.3	96	9	86	63	21	69	23	70	68	79	1.99	− 2.5	11	6,203	e.	29	se.	11	9	10	12	6.2	.....	.....
Macon	370	78	87	29.60	29.99	− .02	80.0	+ 1.8	94	8	89	66	21	71	22	.....	.....	.....	4.15	− 0.1	17	3,889	s.	30	s.	11	8	12	11	5.8	.....	.....
Thomasville	273	8	57	29.71	29.99	− .01	80.4	− 0.6	97	7	90	66	22	71	26	73	72	87	3.87	− 1.2	17	3,645	e.	26	sw.	19	3	15	13	6.6	.....	.....
Pensacola	56	140	183	29.92	29.98	.00	80.5	− 0.5	96	8	87	71	12	74	22	.....	.....	.....	7.21	0.0	17	8,208	nw.	80	se.	11	8	14	9	5.5	.....	.....
Anniston	741	9	57	29 25	30.03	+ .04	77.6	+ 1.2	94	9	87	60	21	68	27	.....	.....	.....	3.24	− 1.2	16	3.125	se.	26	ne.	10	2	17	12	6.7	.....	.....
Birmingham	700	11	48	29.27	30.02	+ .03	77.9	− 1.9	94	10	87	65	30	69	25	70	68	80	2.10	− 2.4	11	3.926	n.	28	se.	11	7	15	9	5.9	.....	.....
Mobile	57	98	106	29.91	29.97	− .01	80.9	+ 1.2	96	8	89	70	31	73	24	74	73	82	8.81	+ 2.0	16	4.622	sw.	35	se.	11	9	18	4	5.2	.....	.....
Montgomery	223	100	112	29.76	30.00	+ .01	80.0	+ 0.3	96	9	89	68	23	71	24	72	70	80	4.09	− 0.2	14	3,817	n.	27	se.	13	4	20	7	5.9	.....	.....
Meridian	375	84	93	29.59	29.98	.00	78.6	+ 0.1	95	8	87	63	30	70	24	72	70	83	5.23	+ 1.7	10	3,269	ne.	26	e.	12	6	16	9	6.0	.....	.....
Vicksburg	247	62	74	29.71	29.98	.00	80.2	+ 0.6	98	10	88	63	30	72	22	73	71	80	2.86	− 0.7	14	4,071	se.	24	sw.	17	7	13	11	6.0	.....	.....
New Orleans	51	90	121	29.92	29.97	− .01	81.8	+ 0.8	97	9	90	69	20	74	23	75	73	82	8.15	+ 2.5	14	4,963	sw.	40	ne.	9	5	18	8	5.9	.....	.....
West Gulf States.							**81.8**	**+ 1.0**											**73**	**4.19**	**+ 1.2**								**4.1**		
Shreveport	249	77	84	29.68	29.94	− .03	81.6	+ 0.2	102	9	91	62	31	72	26	72	69	74	9.75	+ 7.5	11	3,615	s.	24	e.	21	10	13	8	5.3	.....	.....
Bentonville	1,303	11	44	28.62	29.96	− .01	74.6	− 1.9	96	10	89	49	30	65	33	.....	.....	.....	3.29	− 0.8	9	2,855	n.	16	e.	21	16	6	9	4.2	.....	.....
Fort Smith	457	79	94	29.46	29.93	− .04	79.4	0.0	102	10	88	56	30	71	28	71	68	75	6.25	+ 2.6	11	4,501	e.	28	ne.	3	15	4	12	4.9	.....	.....
Little Rock	357	139	147	29.59	29.96	− .02	78.5	− 0.7	102	9	86	60	30	71	26	72	71	83	8.88	+ 5.2	14	5,246	e.	49	nw.	27	10	5	16	6.1	.....	.....
Brownsville	57	4	.....	.....	.....	.....	84.7	.....	97	8	94	69	31	75	24	.....	.....	.....	T.	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corpus Christi	20	69	77	29.92	29.94	+ .01	82.6	+ 0.5	92	12	88	73	10	77	16	76	74	81	0.00	− 2.3	0	10,809	se.	36	se.	5	25	5	1	2.4	.....	.....
Fort Worth	670	106	114	29.20	29.90	− .04	84.5	+ 1.6	106	14	95	65	31	74	29	71	65	60	2.39	+ 0.5	6	6,377	s.	32	ne.	11	13	11	7	4.1	.....	.....
Galveston	54	106	112	29.90	29.95	− .01	82.8	+ 0.2	92	9	88	69	11	78	23	76	74	76	5.48	+ 0.5	10	7,385	s.	38	e.	11	11	18	2	4.1	.....	.....
Houston	138	111	121	29.81	29.95	.....	83.5	.....	98	9	93	68	31	74	27	.....	.....	.....	1.87	.....	9	5,042	s.	36	ne.	11	14	15	2	4.0	.....	.....
Palestine	510	73	79	29.41	29.93	− .04	82.6	+ 2.1	100	20	92	60	31	73	29	73	69	72	3.01	+ 0.8	5	5,477	s.	31	ne.	1	12	14	5	4.5	.....	.....
San Antonio	701	80	91	29.20	29.90	− .03	86.2	+ 4.2	102	12	98	67	31	74	28	72	66	61	0.48	− 2.2	2	4,570	se.	27	n.	15	21	8	2	2.7	.....	.....
Taylor	583	55	63	29.33	29.94	− .01	85.2	+ 3.5	101	9	96	65	31	74	29	.....	.....	.....	2.41	− 0.1	3	6,149	s.	28	e.	23	22	8	1	2.3	.....	.....
Ohio Valley and Tenn.							**75.5**	**+ 0.7**											**74**	**4.43**	**+ 1.0**								**5.8**		
Chattanooga	702	189	213	29.23	30.03	+ .03	77.4	+ 0.9	92	8	86	61	21	69	27	70	67	78	3.02	− 0.7	14	4,455	w.	43	w.	7	4	16	11	6.3	.....	.....
Knoxville	996	93	100	28.98	30.01	.00	77.4	+ 2.7	94	10	87	62	21	68	25	70	67	77	2.99	− 1.0	12	2,993	sw.	19	e.	8	6	15	10	5.8	.....	.....
Memphis	399	76	97	29.58	30.00	+ .02	78.2	− 1.0	96	9	86	58	30	71	21	72	69	80	5.64	+ 2.4	15	4,579	se.	48	sw.	4	5	15	11	6.3	.....	.....
Nashville	546	108	191	29.44	30.02	+ .02	76.4	− 1.4	95	10	85	60	29	68	26	70	68	82	5.17	+ 1.7	13	4,697	se.	48	nw.	7	4	15	12	6.5	.....	.....
Lexington	989	75	102	28.97	30.01	.00	75.8	+ 1.2	99	10	85	56	29	66	28	.....	.....	.....	2.84	− 0.7	11	5,559	sw.	49	se.	12	4	13	14	6.7	.....	.....
Louisville	525	111	132	29.45	30.02	+ .02	78.5	+ 2.0	102	10	88	59	30	69	31	68	63	67	2.71	− 0.8	8	4,531	n.	28	nw.	17	6	14	11	5.9	.....	.....
Evansville	431	72	82	29.54	30.00	+ .01	72.1	− 4.9	99	10	86	54	30	68	27	68	65	72	4.92	+ 1.7	8	3,862	s.	24	n.	17	7	19	5	5.4	.....	.....

TABLE I.—*Climatological data for U. S. Weather Bureau stations, August, 1911*—Continued.

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Precipitation, inches.			Wind.						Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min.÷2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.						
***Ohio Valley and Tenn.*—Continued.**																																	
Fort Wayne	856	113	124	.....	.....	.....	70.9	.....	97	10	80	47	30	61	31	64	60	72	2.91	.....	12	5,083	ne.	31	nw.	12	10	12	9	5.1	.....	.....
Indianapolis	822	154	164	29.15	30.02	+ .02	74.2	+ 0.6	99	10	84	50	30	65	30	65	60	66	1.16	− 2.2	7	5,424	s.	36	sw.	17	9	15	7	5.1	.....	.....
Cincinnati	628	152	160	29.36	30.02	+ .01	76.0	+ 0.5	96	10	85	54	30	67	27	67	64	70	3.06	− 0.3	9	3,610	se.	32	w.	5	6	9	16	6.5	.....	.....
Columbus	824	173	222	29.16	30.02	+ .01	73.9	+ 0.9	98	10	83	51	30	64	31	65	61	71	3.62	+ 0.4	11	6,180	sw.	60	w.	17	10	12	9	5.4	.....	.....
Dayton	899	181	216	29.07	30.01	.....	73.8	.....	98	10	84	48	30	64	30	66	62	72	3.25	.....	12	5,943	sw.	33	sw.	4	11	12	8	5.5	.....	.....
Pittsburgh	842	353	410	29.13	30.01	.00	73.8	+ 1.3	97	10	82	51	20	65	31	66	62	72	6.30	+ 3.1	13	6,727	nw.	42	sw.	2	10	10	11	5.5	.....	.....
Parksburg	638	77	84	29.38	30.03	+ .02	76.2	+ 2.9	98	10	86	52	21	66	35	68	65	75	5.79	+ 2.3	15	3,312	n.	24	w.	7	10	11	10	5.5	.....	.....
Elkins	1,940	41	50	28.04	30.03	+ .01	71.6	+ 3.2	97	11	84	47	21	59	41	64	62	84	10.42	+ 6.8	18	1,853	n.	21	w.	18	12	6	13	5.3	.....	.....
Lower Lake Region.							**70.1**	**+ 0.6**										**73**	**3.93**	**+ 0.9**									**5.4**		
Buffalo	767	178	206	29.19	30.01	+ .02	69.8	+ 1.0	92	1	77	49	30	62	22	64	61	76	4.61	+ 1.6	11	7,298	sw.	41	nw.	11	11	11	9	4.9	.....	.....
Canton	448	10	71	29.54	30.01	.....	68.0	+ 0.2	93	1	79	39	30	57	32	.....	.....	.....	2.67	0.0	11	5,951	sw.	38	sw.	2	7	13	11	5.6	.....	.....
Oswego	335	76	91	29.64	30.00	+ .01	69.0	+ 0.2	90	1	76	51	30	62	24	63	60	75	3.86	+ 1.2	11	5,688	s.	26	n.	18	7	12	12	5.7	.....	.....
Rochester	523	86	102	29.46	30.02	+ .03	70.4	+ 2.1	94	1	79	50	20	62	28	62	58	71	4.29	+ 1.3	11	4,622	sw.	28	w.	8	6	13	12	6.0	.....	.....
Syracuse	597	97	113	29.39	30.03	+ .04	69.3	+ 0.7	89	1	78	48	30	61	27	.....	.....	.....	2.45	− 0.9	10	6,792	s.	36	w.	18	6	13	12	6.2	.....	.....
Erie	714	92	102	29.26	30.01	.00	70.0	+ 0.1	90	1	77	53	21	64	21	65	63	79	5.76	+ 2.5	14	5,615	s.	36	nw.	18	6	15	10	5.9	.....	.....
Cleveland	762	190	201	29.21	30.02	+ .01	70.7	+ 0.3	91	10	77	53	20	64	25	64	61	74	5.18	+ 2.0	11	7,584	n.	35	nw.	28	8	14	9	5.5	.....	.....
Sandusky	629	62	70	29.34	30.02	+ .01	71.8	+ 0.3	93	10	79	56	21	65	26	.....	.....	.....	5.31	+ 1.9	9	4,752	ne.	32	n.	11	10	14	7	4.7	.....	.....
Toledo	628	208	246	29.35	30.03	+ .03	71.8	+ 0.9	94	10	80	49	30	64	24	64	61	72	3.87	+ 1.2	10	8,163	sw.	40	s.	1	16	9	6	4.2	.....	.....
Detroit	730	218	258	29.24	30.02	+ .01	70.6	+ 0.7	90	10	79	48	30	62	24	62	58	64	1.31	− 1.5	9	7,590	e.	39	sw.	1	11	15	5	4.8	.....	.....
Upper Lake Region.							**65.7**	**− 0.3**										**75**	**2.18**	**− 0.8**									**5.1**		
Alpena	609	13	92	29.37	30.03	+ .03	64.5	+ 0.7	90	9	74	40	30	55	34	59	56	77	1.22	− 2.1	9	6,834	nw.	36	se.	7	6	24	1	4.7	.....	.....
Escanaba	612	48	82	29.35	30.00	+ .01	63.4	− 1.1	81	9	71	43	29	56	22	59	56	79	3.52	− 0.1	10	5,616	s.	26	ne.	10	11	16	4	4.8	.....	.....
Grand Haven	632	54	92	29.34	30.01	+ .02	66.8	− 1.0	87	10	76	46	30	58	27	62	59	77	1.20	− 1.4	8	6,260	sw.	37	w.	16	14	14	3	4.0	.....	.....
Grand Rapids	675	70	87	29.27	30.02	+ .02	69.4	− 0.6	92	6	79	45	30	59	28	62	57	69	2.29	− 0.3	10	3,479	w.	18	nw.	14	9	15	7	5.1	.....	.....
Lansing	863	11	62	29.09	30.02	.....	68.2	.....	93	6	80	40	30	56	38	61	57	74	1.48	− 1.2	9	3,188	s.	21	n.	10	11	13	7	4.6	.....	.....
Houghton	668	66	74	29.26	29.98	+ .01	62.7	− 0.6	85	15	71	44	29	54	27	.....	.....	.....	2.17	− 0.7	15	5,800	w.	30	nw.	28	11	9	11	5.5	.....	.....
Marquette	734	77	116	29.22	30.02	+ .04	63.4	− 0.1	86	13	71	45	29	56	25	58	56	79	1.59	− 1.3	10	6,470	s.	56	s.	21	5	16	10	6.3	.....	.....
Port Huron	638	78	120	29.33	30.02	+ .02	68.2	+ 0.9	91	7	77	48	30	59	29	62	58	74	2.22	− 0.4	10	6,297	ne.	38	sw.	1	9	13	9	5.1	.....	.....
Sault Ste. Marie	614	11	61	29.34	30.02	+ .03	62.2	+ 1.6	83	14	72	40	30	53	33	57	55	83	2.39	− 0.8	6	5,627	nw.	36	w.	28	9	10	12	5.9	.....	.....
Chicago	823	140	310	29.15	30.02	+ .02	71.8	+ 0.6	92	16	78	59	24	66	20	64	60	70	3.72	+ 0.8	12	8,044	ne.	36	nw.	14	13	13	5	4.5	.....	.....
Milwaukee	681	122	138	29.28	30.02	+ .02	68.6	− 0.1	90	7	76	50	29	61	28	62	58	73	1.99	− 0.8	9	6,598	ne.	35	ne.	10	14	14	3	4.4	.....	.....
Green Bay	617	49	86	29.34	30.00	+ .01	66.9	− 0.1	90	15	76	45	29	57	27	60	55	69	1.56	− 1.5	8	6,996	s.	39	sw.	21	2	21	8	6.6	.....	.....
Duluth	1,133	11	47	28.79	30.00	+ .03	61.0	− 3.9	85	15	70	42	29	52	32	56	53	78	3.02	− 0.5	11	8,019	ne.	37	nw.	15	6	20	5	5.3	.....	.....
North Dakota.							**63.0**	**− 3.7**										**74**	**3.34**	**+ 1.1**									**5.2**		
Moorhead	940	8	57	28.98	29.99	+ .03	64.4	− 1.5	90	14	76	40	29	52	39	58	55	78	2.96	− 0.1	12	4,932	se.	29	n.	15	12	11	8	4.8	.....	.....
Bismarck	1,674	4	57	28.25	30.02	+ .08	63.6	− 4.5	91	14	76	32	28	52	37	57	54	75	2.72	+ 0.7	10	6,725	nw.	46	n.	13	10	14	7	5.0	.....	.....
Devils Lake	1,482	11	44	28.44	30.00	+ .06	61.4	− 3.7	87	13	72	37	28	51	28	55	52	76	5.43	+ 2.7	16	6,730	nw.	53	w.	13	9	13	9	5.5	.....	.....
Williston	1,896	40	47	28.02	29.98	+ .05	62.6	− 5.3	96	13	75	32	22	50	40	54	49	68	2.27	+ 1.0	11	5,593	se.	59	nw.	13	11	9	11	5.5	.....	.....
Upper Miss. Valley.							**71.9**	**− 0.9**										**72**	**3.84**	**+ 0.6**									**5.0**		
Minneapolis	918	102	208	.....	.....	.....	66.6	.....	89	15	76	45	29	58	28	.....	.....	.....	3.65	0.0	12	7,464	nw.	33	nw.	15	9	8	14	6.0	.....	.....
St. Paul	940	203	212	29.10	29.99	+ .02	66.1	− 3.4	90	15	75	44	29	57	29	59	54	69	5.50	+ 2.0	14	6,519	se.	41	n.	15	11	15	5	4.7	.....	.....
La Crosse	714	11	48	29.24	30.00	+ .02	67.8	− 2.2	90	15	78	42	29	58	29	.....	.....	.....	3.49	+ 0.1	12	2,910	s.	18	sw.	7	9	8	14	5.9	.....	.....
Madison	974	70	78	29.00	30.02	+ .03	68.8	− 0.8	89	6	78	48	29	60	27	61	57	71	3.78	+ 0.6	12	5,288	sw.	39	nw.	14	8	15	8	5.2	.....	.....
Charles City	1,015	10	49	.....	.....	.....	68.5	− 2.2	90	15	79	41	29	58	30	.....	.....	.....	4.62	+ 1.2	13	4,019	se.	32	s.	7	8	10	13	.....	.....	.....
Davenport	606	71	79	29.35	30.00	+ .02	72.4	− 0.6	94	10	82	49	29	62	30	64	61	71	4.92	+ 1.3	12	4,542	e.	30	nw.	9	14	14	3	4.0	.....	.....
Des Moines	861	84	101	29.07	29.96	− .01	73.8	+ 0.8	102	16	85	49	29	63	34	63	57	61	1.82	− 1.8	9	5,151	e.	30	nw.	6	14	12	5	4.5	.....	.....
Dubuque	698	100	115	29.29	30.03	+ .05	70.1	− 1.9	91	16	80	45	29	60	30	63	59	74	8.74	+ 5.7	13	3,634	s.	24	se.	10	8	14	9	5.3	.....	.....
Keokuk	614	64	78	29.34	30.01	+ .03	74.2	− 0.4	99	10	84	50	30	64	34	66	63	71	1.74	− 1.5	8	4,173	s.	26	nw.	7	15	13	3	4.0	.....	.....
Cairo	350	87	93	29.62	29.99	.00	76.6	+ 0.4	98	8	84	57	30	69	27	70	67	80	2.82	− 0.1	17	4,695	ne.	35	nw.	8	8	7	16	6.3	.....	.....
La Salle	536	56	64	29.46	30.03	+ .04	71.7	+ 0.3	94	16	82	47	30	61	30	.....	.....	.....	6.45	+ 3.6	10	4,013	ne.	37	nw.	9	13	14	4	4.2	.....	.....
Peoria	609	11	45	29.37	30.03	+ .04	72.0	− 0.5	95	16	84	47	29	60	39	64	61	75	1.73	− 1.2	9	3,964	s.	29	n.	9	7	18	6	5.3	.....	.....
Springfield, Ill	644	10	91	29.32	30.00	+ .01	73.6	− 0.4	94	16	84	49	30	6a	30	65	62	72	3.37	+ 0.6	9	4,784	s.	29	n.	9	11	9	11	5.0	.....	.....
Hannibal	534	74	109	29.43	29.99	+ .01	75.0	0.0	98	10	85	49	31	64	40	.....	.....	.....	1.46	− 1.9	5	5,306	e.	33	nw.	7	11	9	11	5.2	.....	.....
St. Louis	567	208	317	29.39	29.99	.00	75.8	− 1.4	96	9	84	52	30	68	25	67	64	72	3.51	+ 0.8	11	5,772	s.	32	n.	28	11	10	10	4.9	.....	.....
Missouri Valley.							**73.0**	**− 0.7**										**67**	**3.32**	**+ 0.1**									**4.1**		
Columbia, Mo.	784	11	84	29.16	29.97	.00	75.6	+ 0.9	105	9	87	50	30	64	37	.....	.....	.....	1.86	− 1.2	5	4,445	se.	20	n.	17	21	7	3	3.3	.....	.....
Kansas City	963	161	181	28.94	29.94	− .03	78.0	+ 2.2	104	9	87	55	29	69	29	67	61	61	2.31	− 2.4	4	7,046	s.	40	nw.	3	15	13	3	3.5	.....	.....
St. Joseph	967	11	49	28.94	29.95	.....	76.8	.....	103	10	88	53	29	66	32	67	63	69	4.43	.....	5	4,301	se.	39	nw.	6	19	10	2	3.2	.....	.....
Springfield, Mo.	1,324	98	104	28.61	29.99	+ .02	74.1	− 0.7	94	9	82	53	30	67	25	68	66	81	6.92	+ 2.6	11	5,597	se.	29	se.	21	14	6	11	4.7	.....	.....
Iola	984	11	50	28.94	29.95	− .01	76.3	0.0	97	9	88	47	29	64	35	.....	.....	.....	3.85	+ 0.4	6	3,871	s.	25	n.	21	17	9	5	3.1	.....	.....
Topeka	983	85	101	.....	.....	.....	77.2	+ 1.2	104	10	88	52	29	66	32	.....	.....	.....	4.44	+ 0.2	10	5,437	s.	46	sw.	7	22	7	2	2.2	.....	.....
Lincoln	1,189	11	84	28.72	29.96	+ .01	74.8	+ 0.5	103	15	87	45	28	62	34	64	59	64	4.32	+ 0.6	11	6,626	se.	47	sw.	20	15	10	6	4.2	.....	.....
Omaha	1,105	115	121	28.81	29.96	.00	75.4	+ 1.0	100	16	86	48	28	65	29	64	58	62	0.71	− 2.9	8	5,280	s.	30	n.	27	7	17	7	5.0	.....	.....
Valentine	2,598	47	54	27.32	30.00	+ .06	67.6	− 3.7	100	15	80	36	28	56	41	58	54	69	3.57	+ 0.8	14	6,616	s.	44	n.	17	11	17	3	4.3	.....	.....
Sioux City	1,135	94	164	28.78	29.97	+ .02	71.0	− 1.6	95	15	82	43	28	60	32	62	57	67	2.86	− 0.1	9	7,825	s.	42	w.	6	15	12	4	4.2	.....	.....
Pierre	1,572	70	75	28.35	29.99	+ .05	69.4	− 3.7	104	15	80	39	28	59	40	59	53	64	2.20	+ 0.2	7	7,237	e.	42	se.	5	8	14	9	5.2	.....	.....
Huron	1,306	56	67	28.62	30.00	+ .05	67.6	− 1.5	102	15	80	36	28	56	41	59	54	69	2.82	+ 0.2	9	6,602	se.	35	se.	29	9	14	8	5.1	.....	.....
Yankton	1,233	49	57	28.67	29.97	+ .02	69.6	− 3.2	99	15	81	42	28	59	32	.....	.....	.....	4.03	+ 0.9	9	4,879	e.	33	e.	9	4	20	7	5.9	.....	.....
Northern Slope.							**63.6**	**− 3.2**										**61**	**1.40**	**+ 0.1**									**4.5**		
Havre	2,505	11	44	27.38	29.99	+ .08	62.7	− 4.2	90	31	76	31	27	50	40	54	49	68	2.24	+ 1.0	12	4,120	e.	34	nw.	20	19	7	5	4.1	.....	.....
Miles City	2,371	26	48	27.49	30.01	+ .08	67.2	− 4.3	98	13	80	38	28	54	42	58	53	67	1.59	+ 0.6	10	3,843	ne.	34	ne.	18	12	10	9	5.0	.....	.....
Helena	4,110	8	56	25.84	29.98	+ .04	61.8	− 4.3	90	19	74	38	24	49	41	50	42	56	0.87	+ 0.2	9	4,150	sw.	28	sw.	31	12	11	8	4.8	.....	.....
Kalispell	2,962	11	34	26.96	29.98	+ .05	60.4	− 2.5	88	31	74	38	26	47	39	50	44	66	1.44	+ 0.6	9	3,265	w.	21	n.	25	13	12	6	4.5	.....	.....
Rapid City	3,234	46	50	26.65	30.01	+ .08	65.6	− 3.2	97	15	77	36	28	54	37	55	47	58	2.01	− 0.1	13	5,267	se.	33	n.	26	9	12	10	5.4	.....	.....
Cheyenne	6,088	56	64	24.10	29.94	+ .02	65.0	− 0.8	90	8	79	41	28	51	38	51	42	53	1.35	− 0.1	7	6,604	s.	38	s.	18	6	19	6	5.5	.....	.....
Lander	5,372	26	36	24.70	29.94	+ .02	63.8	− 1.9	93	18	81	35	25	46	45	50	38	51	0.22	− 0.3	4	2,687	w.	33	ne.	23	21	9	1	2.7	.....	.....
Sheridan	3,790	9	47	26.15	30.00	.....	63.0	.....	94	31	78	31	28	58	48	53	46	62	1.24	.....	8	4,310	nw.	37	se.	18	10	9	12	5.8	.....	.....
Yellowstone Park	6,200	11	48	23.95	29.97	+ .04	56.4	− 4.5	84	18	72	33	24	41	42	44	35	56	0.66	− 0.4	6	5,546	sw.	31	s.	7	15	15	1	3.3	.....	.....
North Platte	2,821	11	51	27.12	30.00	+ .06	69.4	− 2.8	97	14	82	41	28	56	42	60	56	72	2.19	− 0.3	9	5,215	se.	36	sw.	20	11	18	2	4.3	.....	.....

TABLE I.—*Climatological data for U. S. Weather Bureau stations, August, 1911*—Continued.

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.									Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Precipitation, inches.			Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.				Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
Middle Slope.							**75.2**	**0.0**										**61**	**2.45**	**0.0**									**3.9**		
Denver	5,291	129	136	24.80	29.94	+ .02	70.3	− 0.1	97	8	84	45	25	56	39	54	44	48	1.08	− 0.3	6	5,806	s.	42	w.	2	13	18	0	4.2	.....	.....
Pueblo	4,685	80	86	25.34	29.93	+ .02	72.4	+ 0.3	98	15	87	47	29	58	40	56	48	53	0.37	− 1.2	7	4,834	se.	38	w.	11	15	11	5	4.0	.....	.....
Concordia	1,398	42	50	28.52	29.96	+ .01	75.8	− 0.7	106	10	88	48	29	64	38	65	61	66	5.78	+ 3.0	10	4,300	s.	34	w.	26	11	13	7	4.8	.....	.....
Dodge City	2,509	11	51	27.40	29.95	+ .02	74.8	− 1.7	102	20	87	51	29	63	33	64	60	67	2.21	− 0.4	6	7,251	se.	40	w.	2	14	13	4	4.3	.....	.....
Wichita	1,364	139	158	28.57	29.97	+ .02	77.2	− 0.3	101	21	88	54	29	67	32	67	63	67	4.32	+ 1.2	5	7,356	s.	41	s.	1	16	13	2	3.5	.....	.....
Oklahoma	1,214	10	47	28.69	29.93	− .01	80.6	+ 2.1	105	21	92	54	29	69	31	69	63	63	0.94	− 2.2	7	8,458	s.	60	w.	4	19	10	2	2.8	.....	.....
Southern Slope.							**81.2**	**+ 2.1**										**58**	**2.04**	**− 0.2**									**3.5**		
Abilene	1,738	10	52	28.15	29.90	− .02	83.3	+ 2.1	103	14	94	63	29	73	28	68	61	55	2.83	+ 0.9	7	6,450	s.	34	sw.	3	19	4	8	3.9	.....	.....
Amarillo	3,676	10	49	26.30	29.94	+ .02	75.8	+ 1.2	102	6	88	54	28	63	38	63	56	61	2.97	+ 0.2	5	7,711	se.	30	se.	2	18	11	2	4.0	.....	.....
Del Rio	944	8	57	28.91	29.86	− .04	89.0	+ 5.0	106	13	102	72	16	76	32	.....	.....	.....	1.14	− 1.6	3	6,070	se.	34	nw.	25	20	10	1	2.8	.....	.....
Roswell	3,578	9	57	26.36	29.91	+ .03	76.7	+ 0.1	102	5	93	54	31	61	45	62	55	58	1.23	− 0.2	5	3,441	s.	24	ne.	25	19	8	4	3.4	.....	.....
Southern Plateau.							**77.4**	**0.0**										**43**	**0.85**	**− 0.5**									**2.5**		
El Paso	3,762	110	133	26.16	29.81	− .03	81.7	+ 3.1	102	7	93	63	26	70	32	61	47	37	0.45	− 1.3	3	7,394	e.	50	sw.	22	20	11	0	2.5	.....	.....
Santa Fe	7,013	8	56	23.37	29.88	− .01	67.2	+ 0.2	87	9	80	46	29	55	34	53	43	47	0.51	− 1.8	8	5,522	ne.	34	nw.	2	14	16	1	3.8	.....	.....
Flagstaff	6,907	8	57	23.07	29.91	+ .07	62.1	− 0.7	84	17	77	41	30	47	38	50	43	62	2.45	− 0.8	16	4,228	nw.	28	sw.	16	13	10	8	4.5	.....	.....
Phoenix	1,108	50	56	28.66	29.77	± .02	87.7	− 1.3	108	19	101	66	27	74	34	68	57	40	1.68	+ 0.7	6	1,875	e.	21	s.	9	21	9	1	2.8	.....	.....
Yuma	141	9	58	29.61	29.75	− .01	90.9	+ 0.8	114	30	108	67	5	74	43	72	63	47	0.01	− 0.3	1	4,253	s.	38	s.	9	30	1	0	0.4	.....	.....
Independence	3,910	11	42	25.93	29.83	+ .02	74.6	− 1.8	100	18	93	50	13	56	47	53	30	26	0.00	− 0.1	0	4,605	nw.	.....	.....	.....	31	0	0	1.1	.....	.....
Middle Plateau.							**69.9**	**− 0.8**										**36**	**0.55**	**− 0.3**									**2.2**		
Reno	4,532	56	63	25.48	29.90	+ .06	67.6	+ 0.6	93	29	86	42	20	49	45	49	33	35	T.	− 0.2	0	5,185	w.	28	w.	10	31	0	0	0.4	.....	.....
Tonopah	6,090	12	20	24.09	29.86	.....	72.5	.....	92	19	85	55	2	60	28	49	26	19	0.00	− 0.4	0	5,305	se.	24	w.	1	31	0	0	0.6	.....	.....
Winnemucca	4,344	18	56	25.61	29.94	+ .06	66.8	− 4.0	93	30	88	40	20	46	51	47	31	34	0.01	− 0.2	1	3,781	sw.	25	nw.	5	28	2	1	1.2	.....	.....
Modena	5,479	10	43	24.64	29.86	.00	69.6	+ 1.0	91	18	86	44	25	53	42	50	34	34	0.52	− 1.3	2	8,975	sw.	40	nw.	26	19	12	0	3.0	.....	.....
Salt Lake City	4,360	147	189	25.59	29.86	− .05	74.8	− 0.7	96	18	86	52	25	63	33	55	39	30	0.05	− 0.7	2	5,929	se.	31	ne.	5	24	7	0	2.7	.....	.....
Durango	6,546	18	56	23.78	29.95	+ .05	65.0	− 1.3	89	19	81	41	28	49	43	52	45	60	2.89	+ 1.1	15	3,826	nw.	33	ne.	25	14	14	3	4.1	.....	.....
Grand Junction	4,608	43	51	25.39	29.90	.00	75.8	− 0.3	97	17	90	54	3	62	35	56	42	37	0.35	− 0.7	6	4,253	se.	34	nw.	22	19	8	4	3.2	.....	.....
Northern Plateau.							**68.6**	**− 1.8**										**38**	**0.34**	**− 0.1**									**2.5**		
Baker	3,466	48	53	26.46	30.00	+ .05	63.0	− 1.9	91	17	79	41	24	47	41	49	36	42	0.12	− 0.3	2	4,657	nw.	27	nw.	14	22	9	0	1.9	.....	.....
Boise	2,739	78	86	27.12	29.93	.00	69.5	− 2.3	94	18	85	49	23	54	38	52	37	35	T.	− 0.2	0	3,395	nw.	18	w.	23	24	7	0	1.5	.....	.....
Lewiston	757	10	51	29.15	29.95	.00	71.3	− 2.2	102	17	87	47	21	56	47	.....	.....	.....	0.74	+ 0.4	5	3,878	e.	49	n.	4	20	8	3	3.3	.....	.....
Pocatello	4,477	46	54	25.47	29.89	− .03	68.3	− 2.2	94	19	85	41	27	52	43	48	30	29	0.01	− 0.6	1	5,793	se.	26	sw.	23	23	8	0	1.9	.....	.....
Spokane	1,929	101	110	27.95	29.97	+ .02	66.2	− 1.7	91	31	79	47	24	53	37	54	44	53	1.16	+ 0.7	6	3,666	ne.	24	sw.	19	13	12	6	4.3	.....	.....
Walla Walla	1,045	107	115	28.90	29.96	.00	73.0	− 0.8	95	31	86	54	26	60	33	55	39	33	0.02	− 0.4	1	5,359	s.	50	sw.	14	27	4	0	1.9	.....	.....
N. Pacific Coast Region.							**60.6**	**− 0.5**										**75**	**0.23**	**− 0.6**									**5.2**		
North Head	211	11	56	29.87	30.10	+ .07	57.4	− 0.5	75	22	61	51	27	54	17	54	52	85	0.23	− 0.3	4	7,972	nw.	36	se.	19	10	7	14	5.8	.....	.....
Port Crescent	259	8	53	29.82	30.11	+ .09	55.2	− 1.0	83	26	63	40	16	47	37	.....	.....	.....	0.42	− 0.3	1	3,546	w.	14	s.	22	7	20	4	5.2	.....	.....
Seattle	125	185	224	29.94	30.07	+ .07	62.6	− 0.5	81	24	71	50	10	54	27	56	51	72	0.13	− 0.4	2	4,329	n.	24	n.	31	12	9	10	5.3	.....	.....
Tacoma	213	113	120	29.84	30.06	+ .04	62.1	− 0.9	82	27	72	47	16	53	28	.....	.....	.....	0.17	− 0.5	2	3,817	n.	24	n.	22	8	6	17	6.5	.....	.....
Tatoosh Island	86	7	57	29.98	30.08	+ .08	53.5	− 1.8	68	26	58	47	21	49	19	51	50	92	0.35	− 1.8	8	7,437	s.	28	ne.	22	7	5	19	6.9	.....	.....
Portland, Oreg.	153	68	106	29.87	30.03	+ .02	67.0	+ 1.1	90	23	77	51	16	57	31	59	53	65	0.28	− 0.4	3	4,349	nw.	17	nw.	5	13	12	6	4.3	.....	.....
Roseburg	510	9	57	29.47	30.02	+ .02	66.5	+ 0.3	93	23	82	45	16	51	42	56	48	60	0.00	− 0.3	0	2,606	n.	21	nw.	29	21	9	1	2.1	.....	.....
Mid. Pac. Coast Region.							**64.0**	**− 2.7**										**63**	**0.01**	**0.0**									**3.8**		
Eureka	80	73	89	29.99	30.06	+ .06	55.8	0.0	65	19	59	48	16	52	16	53	52	88	0.08	0.0	4	4,324	n.	27	n.	20	0	19	12	7.1	.....	.....
Mt. Tamalpais	2,375	11	18	27.53	29.97	+ .04	66.1	.....	89	30	74	44	14	58	26	52	42	45	0.00	0.0	0	9,724	nw.	56	nw.	17	29	2	0	0.7	.....	.....
Point Reyes Light	490	7	18	29.44	29.95	.....	52.4	.....	58	19	55	47	6	50	9	.....	.....	.....	0.00	0.0	0	18,083	nw.	62	nw.	16	5	5	21	7.6	.....	.....
Red Bluff	332	50	56	29.53	29.87	+ .01	76.6	− 4.4	102	24	93	54	15	61	40	58	43	36	0.00	0.0	0	3,179	se.	18	n.	20	31	0	0	0.3	.....	.....
Sacramento	69	106	117	29.83	29.90	+ .05	68.8	− 3.3	93	30	84	50	10	54	38	59	53	63	0.00	0.0	0	6,656	s.	21	s.	7	31	0	0	0.6	.....	.....
San Francisco	155	200	204	29.81	29.98	+ .06	56.6	− 1.4	79	20	62	49	30	51	25	52	50	85	0.00	0.0	0	8,287	sw.	30	w.	7	6	18	7	5.4	.....	.....
San Jose	141	12	110	29.82	29.96	.....	62.4	− 4.3	88	20	76	42	16	49	44	.....	.....	.....	0.00	0.0	0	4,186	nw.	22	se.	3	31	0	0	2.1	.....	.....
Southeast Farallon	30	9	17	29.98	30.01	.....	53.8	.....	59	28	55	48	3	52	6	.....	.....	.....	T.	0.0	0	11,308	nw.	45	nw.	2	8	4	19	6.8	.....	.....
S. Pac. Coast Region.							**69.6**	**− 1.0**										**64**	**0.00**	**0.0**									**1.8**		
Fresno	330	67	70	29.53	29.87	+ .05	77.2	− 4.0	104	31	96	55	5	59	42	57	40	35	0.00	0.0	0	4,572	w.	15	w.	19	31	0	0	0.2	.....	.....
Los Angeles	338	159	191	29.54	29.90	+ .02	70.6	+ 2.0	95	18	81	55	12	60	32	61	56	71	0.00	0.0	0	3,863	sw.	17	sw.	4	22	8	1	2.2	.....	.....
San Diego	87	94	102	29.81	29.90	+ .01	67.4	− 1.3	84	19	73	58	13	62	18	63	60	82	0.00	0.0	0	4,446	nw.	22	nw.	15	28	3	0	2.0	.....	.....
San Luis Obispo	201	47	54	29.75	29.97	+ .03	63.0	− 0.5	95	20	75	45	15	51	42	54	49	68	0.00	0.0	0	3,710	nw.	22	n.	19	18	13	0	2.8	.....	.....
West Indies.																															
Grand Turk	11	6	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Juan	82	48	90	29.91	29.99	+ .02	81.4	.....	89	24	87	71	26	76	15	.....	.....	.....	2.96	− 4.4	17	8,070	e.	31	se.	30	19	10	2	3.4	.....	.....

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.80 inch in 1 hour, during August, 1911, at all stations furnished with self-registering gages.*

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.												
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Abilene, Tex.	28			1.23														0.45			
Albany, N. Y.	15	2.25 p. m.	7.30 p. m.	1.62	2.35 p. m.	2.50 p. m.	0.02	0.32	0.70	1.17											
	18	11.12 a. m.	11.55 a. m.	0.79	10.25 a. m.	10.41 a. m.	0.03	0.31	0.57	0.74											
Alpena, Mich.	28			0.40														0.21			
Amarillo, Tex.	22–23	10.23 p. m.	11.00 a. m.	2.64	6.07 a. m.	6.25 a. m.	1.44	0.16	0.33	0.42	0.45										
Anniston, Ala.	1	12.30 p. m.	2.00 p. m.	0.63	12.46 p. m.	1.03 p. m.	0.04	0.13	0.38	0.50	0.57										
Asheville, N. C.	7	2.30 p. m.	3.12 p. m.	1.11	2.36 p. m.	2.51 p. m.	0.01	0.55	0.97	1.06											
	12	12.45 p. m.	3.55 p. m.	2.83	12.54 p. m.	1.41 p. m.	0.01	0.38	0.75	1.10	1.45	1.79	2.12	2.40	2.53	2.65	2.67				
	25	3.11 p. m.	3.33 p. m.	0.71	3.14 p. m.	3.27 p. m.	0.01	0.27	0.66	0.70											
	26	3.00 p. m.	6.10 p. m.	1.16	3.02 p. m.	3.51 p. m.	0.01	0.11	0.24	0.34	0.39	0.43	0.46	0.49	0.68	0.90	0.94				
Atlanta, Ga.	2			0.62														0.40			
Atlantic City, N.J.	25–26	8.20 p. m.	7.05 a. m.	1.44	3.02 a. m.	3.10 a. m.	0.82	0.23	0.46												
Augusta, Ga.	26	5.10 p. m.	6.30 p. m.	1.24	5.12 p. m.	5.38 p. m.	0.01	0.16	0.45	0.68	0.86	1.08	1.15								
Baker, Oreg.	1			0.09														0.05			
Baltimore, Md.	4	11.35 a. m.	2.25 p. m.	2.01	11.35 a. m.	12.58 p. m.	0.00	0.18	0.47	0.59	0.63	0.68	0.76	0.93	1.06	1.18	1.28	1.51	1.82		
	25–26	5.20 p. m.	12.25 a. m.	3.04	6.08 p. m.	6.36 p. m.	0.03	0.19	0.75	1.30	1.74	2.22	2.30								
Bentonville, Ark.	24			0.98														0.46			
Binghamton, N.Y.	28			0.55														0.26			
Birmingham, Ala.	17			0.59														0.48			
Bismarck, N. Dak.	8			0.58														0.45			
Block Island, R. I.	26–27	11.15 p. m.	7.18 a. m.	1.40	2.27 a. m.	2.55 a. m.	0.06	0.39	0.62	0.79	0.89	0.97	1.03								
	28	2.15 a. m.	10.12 a. m.	3.47	6.15 a. m.	9.05 a. m.	0.38	0.16	0.25	0.34	0.45	0.56	0.64	0.77	0.87	0.97	1.05	1.18	1.44	1.76	2.13
Boise, Idaho.	5			T.														T.			
Boston, Mass.	29			1.13														0.34			
Buffalo, N. Y.	3	2.34 p. m.	10.25 p. m.	0.98	2.40 p. m.	2.55 p. m.	T.	0.08	0.40	0.52											
Burlington, Vt.	18			1.54														0.59			
Cairo, Ill.	8	5.42 p. m.	6.35 p. m.	0.59	5.44 p. m.	6.09 p. m.	0.01	0.10	0.30	0.40	0.47	0.53									
Canton, N. Y.	3			0.53														0.47			
Charles City, Iowa																					
Charleston, S. C.	20	2.20 p. m.	5.30 p. m.	1.27	3.34 p. m.	3.53 p. m.	0.14	0.24	0.46	0.60	0.71										
	27	D. N. a. m.	10.23 a. m.	1.23	8.07 a. m.	8.29 a. m.	0.43	0.10	0.28	0.45	0.70	0.77									
Charlotte, N. C.	3–4	D. N. p. m.	9.45 a. m.	1.23	3.28 a. m.	3.45 a. m.	0.23	0.25	0.41	0.51											
	27	4.24 p. m.	5.50 p. m.	0.52	4.32 p. m.	4.46 p. m.	0.01	0.24	0.42	0.48											
	30	7.12 a. m.	9.51 a. m.	1.15	8.26 a. m.	8.51 a. m.	0.16	0.11	0.30	0.53	0.81	0.94									
Chattanooga, Tenn.	1	1.58 p. m.	3.56 p. m.	1.20	2.08 p. m.	3.08 p. m.	0.01	0.15	0.47	0.50	0.54	0.54	0.54	0.54	0.63	0.72	0.92	1.12			
Cheyenene, Wyo.	9	6.00 p. m.	6.20 p. m.	0.47	6.02 p. m.	6.20 p. m.	0.01	0.26	0.41	0.46	0.47										
Chicago Ill.	13	10.59 a. m.	11.53 a. m.	0.91	11.02 a. m.	11.47 a. m.	0.01	0.07	0.30	0.45	0.55	0.65	0.72	0.82	0.88	0.90					
Cincinnati, Ohio.	4			0.29														0.29			
Cleveland, Ohio.	2	1.50 p. m.	2.50 p. m.	0.65	2.03 p. m.	2.23 p. m.	0.01	0.25	0.46	0.56	0.63										
	28	5.35 a. m.	5.20 p. m.	2.43	6.25 a. m.	7.52 a. m.	0.58	0.23	0.36	0.40	0.60	0.69	0.74	0.84	0.95	1.01	1.09	1.23			
Columbia, Mo.	21			1.10														0.49			
Columbia, S. C.	17	9.18 p. m.	10.45 p. m.	0.67	9.36 p. m.	9.51 p. m.	0.04	0.18	0.40	0.52											
	20	7.06 p. m.	9.45 p. m.	0.99	7.07 p. m.	7.16 p. m.	0.01	0.70	0.91												
	27–28	D. N. p. m.	D. N. p. m.	1.08	1.46 a. m.	2.18 a. m.	0.35	0.08	0.17	0.26	0.30	0.44	0.52	0.56							
	30	9.52 p. m.	11.15 p. m.	0.81	9.54 p. m.	10.28 p. m.	0.01	0.07	0.20	0.27	0.35	0.39	0.61	0.76							
Columbus, Ohio.	12			0.46														0.33			
Concord, N. H.	28–29	D. N. p. m.	D. N. a. m.	1.06	10.22 p. m.	11.08 p. m.	0.02	0.09	0.12	0.22	0.27	0.39	0.51	0.65	0.79	0.85	0.88				
Concordia, Kans.	2	8.53 p. m.	11.47 p. m.	1.56	9.28 p. m.	10.15 p. m.	0.01	0.08	0.36	0.70	0.98	1.17	1.30	1.35	1.40	1.45					
	18–19	10.58 p. m.	12.28 a. m.	1.52	11.23 p. m.	12.02 a. m.	0.11	0.25	0.63	0.81	0.89	1.03	1.21	1.31	1.36						
	20–21	8.18 a. m.	3.00 a. m.	0.86	10.05 p. m.	10.20 p. m.	0.06	0.25	0.66	0.71											
Corpus Christi, Tex.	‡																				
Davenport, Iowa.	5	6.18 p. m.	8.50 p. m.	1.80	6.55 p. m.	7.50 p. m.	0.04	0.12	0.46	0.69	0.85	1.03	1.16	1.26	1.34	1.45	1.58	1.68			
	9	11.11 a. m.	1.48 p. m.	0.79	11.12 a. m.	11.27 a. m.	T.	0.15	0.36	0.46											
	11	4.30 a. m.	10.20 a. m.	0.80	4.35 a. m.	5.15 a. m.	0.01	0.14	0.26	0.28	0.29	0.30	0.42	0.59	0.66						
Del Rio, Tex.	25	6.03 p. m.	8.15 p. m.	1.04	6.05 p. m.	6.40 p. m.	T.	0.17	0.34	0.40	0.48	0.60	0.80	0.90							
Denver, Colo.	10			0.53														0.29			
Des Moines, Iowa.	6–7	9.07 p. m.	D. N. a. m.	1.42	10.09 p. m.	11.20 p. m.	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.23	0.59	0.76	0.83	1.06			
Detroit, Mich.	1			0.28														0.27			
Devils Lake, N. Dak.	15	11.06 a. m.	11.39 a. m.	0.37	11.10 a. m.	11.19 a. m.	0.01	0.14	0.32												
Dodge City, Kans.	2–3	8.55 p. m.	D. N. a. m.	0.81	9.05 p. m.	9.30 p. m.	T.	0.12	0.35	0.37	0.39	0.48									
Dubuque, Iowa.	10	6.51 p. m.	10.10 p. m.	2.55	6.52 p. m.	7.42 p. m.	0.00	0.31	0.51	0.61	0.64	0.70	0.80	0.88	0.98	1.03	1.04				
					7.42 p. m.	8.32 p. m.	.....	1.06	1.11	1.13	1.20	1.39	1.46	1.52	1.59	1.68	1.71				
					8.32 p. m.	9.22 p. m.	.....	1.77	1.82	1.87	1.97	2.04	2.07	2.09	2.09	2.09	2.17				
					9.22 p. m.	9.42 p. m.	.....	2.30	2.37	2.44	2.51										
	11	10.05 p. m.	11.50 p. m.	0.51	10.43 p. m.	10.55 p. m.	0.00	0.16	0.41	0.46											
Duluth, Minn.	21			0.71														0.34			
Durango, Colo.	23	11.28 a. m.	3.17 p. m.	1.31	12.25 p. m.	1.24 p. m.	0.17	0.05	0.17	0.24	0.30	0.42	0.51	0.71	0.77	0.90	0.97	1.04			
Eastport, Me.	19			1.08														0.49			
Elkins, W. Va.	4	4.30 p. m.	7.25 p. m.	2.44	4.51 p. m.	5.38 p. m.	0.05	0.34	0.70	0.94	1.36	1.72	1.95	2.11	2.22	2.28	2.31				
	8	9.00 p. m.	9.55 p. m.	0.76	9.05 p. m.	9.42 p. m.	0.01	0.12	0.22	0.34	0.39	0.44	0.59	0.69	0.74						
El Paso, Tex.	25			0.38														0.20			
Erie, Pa.	3	1.27 p. m.	6.10 p. m.	0.91	2.46 p. m.	3.01 p. m.	0.30	0.12	0.31	0.40											
	15	12.30 a. m.	D. N. a. m.	0.80	12.31 a. m.	12.51 a. m.	0.01	0.22	0.43	0.55	0.65										
Escanaba, Mich.	16	D. N. a. m.	D. N. a. m.	0.45	3.02 a. m.	3.07 a. m.	0.02	0.42													
Eureka, Cal.	4			0.04														0.02			
Evansville, Ind.	1	D. N. a. m.	D. N. a. m.	0.74	3.27 a. m.	3.57 a. m.	0.10	0.09	0.17	0.32	0.42	0.46	0.55								
	17	5.28 p. m.	8.25 a. m.	1.39	5.50 p. m.	6.33 p. m.	0.11	0.18	0.39	0.57	0.77	0.87	0.99	1.06	1.15	1.21					
	23			0.54														0.51			
Fort Smith, Ark.	18	D. N. a. m.	D. N. a. m.	0.79	2.32 a. m.	3.17 a. m.	0.02	0.14	0.34	0.40	0.44	0.48	0.51	0.56	0.63	0.69					
	22–23	7.58 p. m.	6.18 a. m.	2.41	9.12 p. m.	10.24 p. m.	0.12	0.13	0.37	0.62	0.77	0.83	0.94	1.14	1.34	1.53	1.58	1.82	2.10		
Fort Wayne, Ind.	1			0.51														0.33			
Fort Worth, Tex.	28	2.32 a. m.	8.30 a. m.	1.92	3.20 a. m.	3.56 a. m.	0.24	0.11	0.22	0.38	0.52	0.75	0.85	0.97	0.98						
Fresno, Cal.	‡																				
Galveston, Tex.	11	9.20 a. m.	10.14 a. m.	0.76	9.24 a. m.	9.39 a. m.	0.01	0.31	0.61	0.73											
	25–26	8.30 p. m.	7.35 a. m.	2.29	8.35 p. m.	8.55 p. m.	0.01	0.20	0.35	0.50	0.58										
					3.29 a. m.	4.20 a. m.	1.00	0.18	0.38	0.71	0.87	0.94	0.94	0.97	0.99	1.07	1.11				
Grand Haven, Mich.	14	9.30 p. m.	11.00 p. m.	0.50	9.38 p. m.	9.56 p. m.	0.01	0.27	0.40	0.44	0.47										
Grand Junction, Colo.	20			0.11														0.06			
Grand Rapids, Mich.	14	10.35 p. m.	11.50 p. m.	0.68	10.40 p. m.	10.55 p. m.	0.01	0.23	0.49	0.61											
Green Bay, Wis.	21			0.63														0.45			
Hannibal, Mo.	7	D. N. a. m.	5.27 a. m.	0.87	2.57 a. m.	3.20 a. m.	0.01	0.15	0.42	0.54	0.64	0.72									
Harrisburg, Pa.	2–3	4.50 p. m.	D. N. a. m.	1.27	7.21 p. m.	7.38 p. m.	0.22	0.21	0.34	0.55	0.62										
	3–4	11.07 p. m.	D. N. a. m.	2.09	11.11 p. m.	12.07 a. m.	0.01	0.22	0.46	0.66	0.78	0.92	1.12	1.27	1.46	1.58	1.67	1.78			

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.80 inch in 1 hour, during August, 1911, at all stations furnished with self-registering gages*—Continued.

Stations.	Date.	Total duration. From—	Total duration. To—	Total amount of precipitation.	Excessive rate. Began—	Excessive rate. Ended—	Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated. 5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Hartford, Conn.	26			0.59														0.41			
Hatteras, N. C.	21	12.45 a. m.	11.20 a. m.	1.80	4.17 a. m.	4.51 a. m.	0.51	0.11	0.16	0.20	0.22	0.35	0.63	0.74							
	22	1.35 a. m.	3.30 a. m.	0.95	2.36 a. m.	3.24 a. m.	0.21	0.06	0.12	0.25	0.32	0.41	0.57	0.62	0.64	0.70	0.73				
Havre, Mont.	4			0.74														0.44			
Helena, Mont.	1			0.26														0.19			
Houghton, Mich.	7			0.80														0.24			
Houston, Tex.	11	5.01 p. m.	5.48 p. m.	0.57	5.07 p. m.	5.25 p. m.	0.01	0.22	0.36	0.47	0.53										
Huron, S. Dak.	5–6	D. N. p.m.	D. N. a.m.	1.45	10.57 p. m.	11.50 p. m.	0.02	0.07	0.12	0.18	0.27	0.35	0.49	0.77	0.97	1.05	1.14	1.23			
Independence, Cal.	‡																				
Indianapolis, Ind.	24			0.57														0.15			
Iola, Kans.	4	12.58 a. m.	7.30 a. m.	2.74	1.04 a. m.	1.19 a. m.	0.01	0.19	0.56	0.64											
					2.08 a. m.	2.53 a. m.	0.72	0.06	0.12	0.26	0.43	0.55	0.69	0.91	1.06	1.11					
Jacksonville, Fla.	4	9.20 a. m.	12.50 p. m.	2.49	9.32 a. m.	11.06 a. m.	0.01	0.25	0.37	0.44	0.45	0.45	0.46	0.46	0.51	0.62	0.86	1.41	2.10	2.37	
	10	12.50 p. m.	2.05 p. m.	1.17	1.02 p. m.	1.59 p. m.	0.01	0.22	0.27	0.32	0.44	0.49	0.49	0.58	0.72	0.84	0.95	1.16			
	21	11.30 a. m.	3.35 p. m.	0.83	1.54 p. m.	2.12 p. m.	0.29	0.13	0.27	0.40	0.48										
	28–30	7.35 a. m.	D. N. a.m.	3.11	5.26 p. m.	6.01 p. m.	0.46	0.28	0.39	0.57	0.60	0.66	0.73	0.82							
	31	2.10 p. m.	8.45 p. m.	0.68	2.10 p. m.	2.29 p. m.	0.00	0.20	0.30	0.43	0.50										
Kalispell, Mont.	4			0.78														0.44			
Kansas City, Mo.	3	2.20 a. m.	8.35 a. m.	1.50	3.31 a. m.	4.06 a. m.	0.03	0.18	0.30	0.44	0.61	0.72	0.78	0.85							
Keokuk, Iowa.	7			0.49														0.40			
Key West, Fla.	13–14	9.10 p. m.	1.00 a. m.	1.54	9.20 p. m.	9.33 p. m.	0.02	0.40	0.64	0.75											
	15	3.40 a. m.	7.05 a. m.	1.31	5.44 a. m.	6.05 a. m.	0.75	0.08	0.30	0.47	0.53										
	21	5.00 p. m.	6.45 p. m.	1.12	5.25 p. m.	6.00 p. m.	0.04	0.09	0.17	0.50	0.76	0.87	0.96	1.04							
Knoxville, Tenn.	2	2.53 p. m.	3.14 p. m.	0.50	2.57 p. m.	3.07 p. m.	0.01	0.36	0.48												
	12	12.23 p. m.	1.15 p. m.	0.64	12.38 p. m.	12.53 p. m.	0.06	0.24	0.46	0.57											
La Crosse, Wis.	7	2.00 a. m.	4.40 a. m.	0.79	2.28 a. m.	2.58 a. m.	0.03	0.13	0.23	0.34	0.41	0.47	0.52								
Lander, Wyo.	6			0.15																	
Lansing, Mich.	15			0.47														0.09			
La Salle, Ill.	11–12	D. N. p.m.	D. N. a.m.	2.22	12.13 a. m.	1.52 a. m.	0.10	0.11	0.22	0.30	0.32	0.37	0.42	0.48	0.51	0.59	0.77	0.44			
	12	8.05 a. m.	9.42 a. m.	1.05	8.05 a. m.	8.36 a. m.	0.00	0.21	0.43	0.49	0.62	0.76	0.90	0.91				1.00	1.63	1.97	
Lewiston, Idaho.	4			0.60																	
Lexington, Ky.	17			0.80														0.33			
Lincoln, Nebr.	2–3	9.40 p. m.	2.15 a. m.	0.95	10.26 p. m.	11.11 p. m.	0.01	0.25	0.32	0.35	0.38	0.38	0.42	0.46	0.57	0.66		0.47			
	17	2.40 a. m.	7.20 a. m.	2.31	3.08 a. m.	4.18 a. m.	0.03	0.06	0.32	0.67	0.99	1.23	1.50	1.63	1.74	1.82	1.87	1.97	2.07		
	20–21	8.15 p. m.	1.30 a. m.	0.66	8.29 p. m.	8.53 p. m.	0.01	0.10	0.24	0.32	0.40	0.46									
Little Rock, Ark.	21	1.18 p. m.	2.10 p. m.	1.27	1.22 p. m.	1.54 p. m.	0.02	0.12	0.32	0.57	0.80	0.99	1.19	1.23							
	22	D. N. a.m.	9.45 a. m.	1.71	6.06 a. m.	6.41 a. m.	0.52	0.05	0.16	0.29	0.39	0.55	0.83	0.94							
	27	2.52 p. m.	3.20 p. m.	0.76	2.54 p. m.	3.13 p. m.	0.01	0.14	0.46	0.67	0.74										
Los Angeles, Cal.	(‡)																				
Louisville, Ky.	28			1.37																	
Lynchburg, Va.	14	5.10 p. m.	5.55 p. m.	0.77	5.16 p. m.	5.41 p. m.	0.01	0.06	0.31	0.41	0.56	0.66						0.63			
Macon, Ga.	1	8.00 p. m.	8.30 p. m.	0.41	8.06 p. m.	8.17 p. m.	0.01	0.12	0.37	0.39											
	19	6.05 p. m.	6.35 p. m.	0.39	6.10 p. m.	6.20 p. m.	0.01	0.20	0.37												
Madison, Wis.	15			1.93																	
Marquette, Mich.	7			0.55														0.72			
Memphis, Tenn.	18	3.05 p. m.	4.45 p. m.	0.66	4.05 p. m.	4.19 p. m.	0.07	0.20	0.33	0.52								0.31			
	20	D. N. a.m.	6.30 a. m.	1.04	6.19 a. m.	6.29 a. m.	0.51	0.31	0.51												
Meridian, Miss.	16	6.33 p. m.	8.05 p. m.	0.94	6.42 p. m.	7.05 p. m.	0.01	0.32	0.48	0.62	0.86	0.91									
	19	4.45 a. m.	6.25 a. m.	1.25	5.07 a. m.	6.14 a. m.	0.03	0.19	0.44	0.57	0.57	0.57	0.61	0.68	0.74	0.77	0.82	1.06			
	7	2.05 p. m.	4.55 p. m.	0.72	2.12 p. m.	2.37 p. m.	0.01	0.11	0.37	0.49	0.54	0.60									
Miami, Fla.	8	12.03 p. m.	1.15 p. m.	1.34	12.09 p. m.	12.40 p. m.	0.02	0.40	0.63	0.86	1.01	1.15	1.23								
	9	7.15 a. m.	9.10 a. m.	0.77	7.30 a. m.	7.55 a. m.	0.02	0.28	0.45	0.52	0.60	0.69									
	14	5.23 a. m.	8.40 a. m.	1.42	5.24 a. m.	6.09 a. m.	0.01	0.18	0.32	0.38	0.49	0.56	0.66	0.78	0.95	1.03					
Milwaukee, Wis.	1			0.85																	
Minneapolis, Minn.	21	12.51 p. m.	1.30 p. m.	0.61	12.52 p. m.	1.01 p. m.	0.01	0.30	0.43									0.38			
Mobile, Ala.	11–12	4.26 p. m.	4.50 p. m.	4.60	2.52 a. m.	3.27 a. m.	0.90	0.08	0.25	0.25	0.31	0.46	0.50	0.60							
					7.52 a. m.	8.41 a. m.	2.54	0.24	0.56	0.68	0.84	0.90	1.05	1.16	1.27	1.34	1.40				
	19	4.10 p. m.	7.10 p. m.	0.60	4.50 p. m.	5.16 p. m.	0.03	0.15	0.31	0.38	0.44	0.51	0.54								
	24	11.45 a. m.	2.55 p. m.	1.31	11.53 a. m.	12.59 p. m.	0.01	0.21	0.37	0.43	0.53	0.60	0.64	0.65	0.66	0.67	0.70	0.98	1.10		
Modena, Utah.	27			0.44														0.34			
Montgomery, Ala.	3	12.45 p. m.	2.15 p. m.	0.80	12.48 p. m.	1.08 p. m.	0.01	0.18	0.43	0.55	0.63										
	14	5.15 p. m.	6.10 p. m.	0.55	5.25 p. m.	5.46 p. m.	0.01	0.19	0.37	0.43	0.48	0.51									
	17	8.12 p. m.	9.00 p. m.	0.57	8.15 p. m.	8.37 p. m.	0.01	0.20	0.32	0.43	0.50	0.53									
Moorhead, Minn.	14	1.55 a. m.	4.00 a. m.	0.68	1.57 a. m.	2.12 a. m.	0.00	0.07	0.28	0.47											
Mount Tamalpais, Cal.	‡																				
Mount Weather, Va.	4–5	4.35 p. m.	D. N. a.m.	3.87	4.49 p. m.	6.29 p. m.	0.02	0.11	0.16	0.32	0.47	0.58	0.74	0.87	0.95	1.09	1.21	1.63	2.52	3.09	
Nantucket, Mass.	15–16	5.55 p. m.	2.15 a. m.	0.80	11.40 p. m.	12.10 a. m.	0.22	0.09	0.14	0.27	0.31	0.46	0.52								
	31–1	2.05 a. m.	2.04 a. m.	4.57	7.32 p. m.	8.17 p. m.	2.49	0.11	0.19	0.28	0.51	0.65	0.88	1.05	1.21	1.34					
Nashville, Tenn.	2	7.50 a. m.	3.15 p. m.	1.26	12.29 p. m.	12.49 p. m.	0.22	0.23	0.55	0.84	0.91										
	7	11.40 a. m.	2.45 p. m.	0.82	11.44 a. m.	11.58 a. m.	0.01	0.11	0.40	0.49											
New Haven, Conn	26–27	11.40 p. m.	8.25 p. m.	1.17	2.17 a. m.	2.36 a. m.	0.19	0.11	0.27	0.44	0.58										
	14	2.45 p. m.	7.30 p. m.	0.61	3.16 p. m.	3.36 p. m.	0.03	0.08	0.28	0.41	0.46										
New Orleans, La.	17	11.44 a. m.	3.35 p. m.	0.83	11.49 a. m.	12.19 p. m.	0.01	0.09	0.20	0.30	0.42	0.53	0.61								
	18	12.50 p. m.	2.30 p. m.	0.62	12.55 p. m.	1.10 p. m.	0.01	0.25	0.46	0.56											
	20	4.18 p. m.	5.02 p. m.	1.99	4.18 p. m.	4.57 p. m.	0.00	0.05	0.28	0.76	1.31	1.60	1.76	1.91	1.98						
	27	2.45 p. m.	4.00 p. m.	0.96	2.49 p. m.	3.13 p. m.	0.01	0.14	0.43	0.53	0.74	0.82									
New York, N. Y.	25			0.96																	
Norfolk, Va.	4	11.15 a. m.	4.00 p. m.	1.76	11.31 a. m.	12.11 p. m.	0.04	0.09	0.28	0.34	0.49	0.80	1.07	1.29	1.40			0.53			
	31	3.45 p. m.	8.45 p. m.	2.11	5.01 p. m.	5.21 p. m.	0.21	0.20	0.42	0.63	0.79										
					5.54 p. m.	6.28 p. m.	1.14	0.11	0.16	0.23	0.27	0.34	0.47	0.57							
Northfield, Vt.	28	11.30 a. m.	8.10 p. m.	2.91	4.42 p. m.	5.32 p. m.	0.65	0.15	0.32	0.44	0.49	0.51	0.51	0.51	0.61	0.65	0.73				
					5.32 p. m.	6.22 p. m.	.....	0.81	0.88	1.01	1.13	1.18	1.29	1.43	1.51	1.54	1.55				
					6.22 p. m.	6.45 p. m.	.....	1.55	1.60	2.02	2.15	2.19									
North Head, Wash	19			0.11																	
North Platte, Nebr	4	2.54 p. m.	8.10 p. m.	0.63	5.17 p. m.	5.32 p. m.	0.22	0.10	0.24	0.35								0.04			
Oklahoma, Okla.	4			0.50																	
Omaha, Nebr.	3			0.38														0.31			
Oswego, N. Y.	8	6.25 a. m.	7.12 a. m.	0.65	6.47 a. m.	7.08 a. m.	0.02	0.05	0.20	0.52	0.61							0.17			
	28	9.30 a. m.	11.35 a. m.	0.67	9.55 a. m.	10.15 a. m.	0.01	0.20	0.43	0.51	0.56										
Palestine, Tex.	25	2.05 p. m.	5.25 p. m.	2.88	2.19 p. m.	3.56 p. m.	0.01	0.08	0.19	0.46	0.63	0.72	0.80	0.86	0.92	1.04	1.23	1.61	2.48	2.81	
Parkersburg, W. Va.	17	9.52 p. m.	10.30 p. m.	0.54	10.00 p. m.	10.19 p. m.	0.01	0.14	0.25	0.41	0.52										
Pensacola, Fla.	11–12	10.55 a. m.	6.20 a. m.	4.33	4.04 p. m.	4.54 p. m.	0.41	0.05	0.14	0.39	0.45	0.47	0.47	0.49	0.51	0.53	0.57				
					4.54 p. m.	5.44 p. m.	.....	0.64	0.67	0.71	0.78	1.02	1.29	1.38	1.46	1.56	1.71				
					5.44 p. m.	6.20 p. m.	.....	1.90	2.03	2.16	2.27	2.38	2.50	2.68	2.73						
Peoria, Ill.	9			0.52																	
Philadelphia, Pa.	11	9.48 p. m.	10.15 p. m.	0.48	9.54 p. m.	10.00 p. m.	0.01	0.37	0.46									0.45			
	26–27	7.15 p. m.	12.02 p. m.	2.17	7.45 a. m.	8.02 a. m.	0.83	0.15	0.40	0.67	0.72										

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.80 inch in 1 hour, during August, 1911, at all stations furnished with self-registering gages*—Continued.

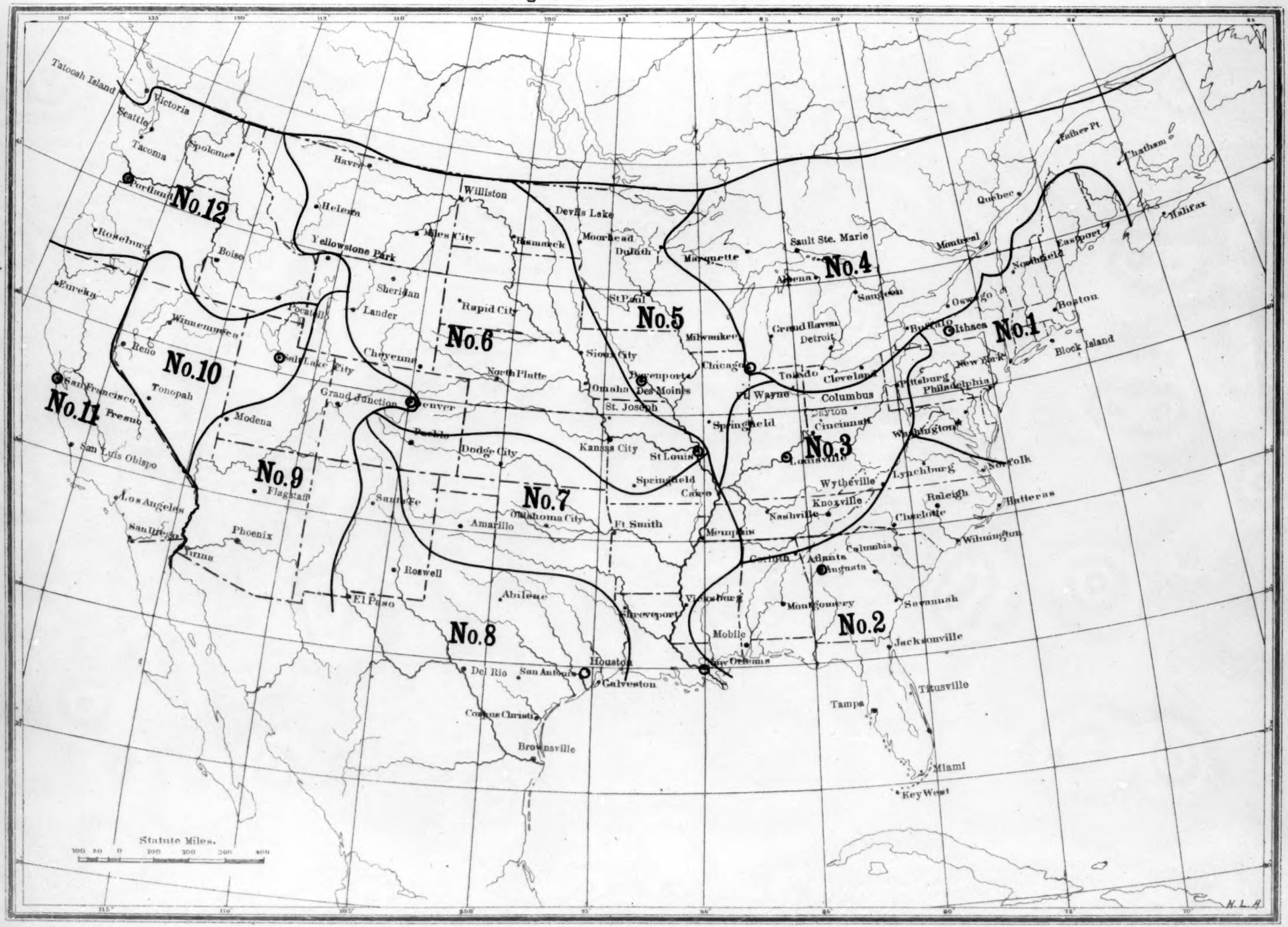
Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.												
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Phoenix, Ariz.	21			0.60														0.38			
Pierre, S. Dak.	6			0.60														0.36			
Pittsburgh, Pa.	3	2.25 p. m.	5.45 p. m.	1.22	4.34 p. m.	4.52 p. m.	0.51	0.27	0.40	0.45	0.53	0.57									
	28	3.35 p. m.	9.50 p. m.	1.24	3.37 p. m.		0.01	0.42	0.46	0.47	0.54	0.64	0.67	0.67	0.73	0.80					
Pocatello, Idaho.	5			0.01														0.01			
Point Reyes Light, Cal.	‡																				
Port Crescent, Wash.	19			0.42														0.23			
Port Huron, Mich.	16	7.04 a. m.	7.50 a. m.	0.40	7.33 a. m.	7.43 a. m.	0.06	0.08	0.34												
Portland, Me.	19			0.48														0.23			
Portland, Oreg.	19			0.12														0.08			
Providence, R. I.	18	6.18 p. m.	7.15 p. m.	0.57	6.32 p. m.	6.39 p. m.	T.	0.39	0.49												
	27	3.00 a. m.	7.15 p. m.	1.26	3.14 a. m.	3.30 a. m.	0.03	0.14	0.30	0.46											
Pueblo, Colo.	21			0.07														0.07			
Raleigh, N. C.	4	6.35 a. m.	11.20 a. m.	1.44	7.44 a. m.	8.16 a. m.	0.01	0.19	0.42	0.69	0.88	1.07	1.17	1.22							
	14–15	10.06 p. m.	D. N. a. m.	1.46	10.19 p. m.	11.02 p. m.	0.05	0.06	0.26	0.48	0.60	0.74	1.01	1.24	1.32	1.38					
	20	D. N. a. m.	D. N. a. m.	1.25	2.14 a. m.	2.40 a. m.	0.25	0.07	0.35	0.60	0.71	0.95	0.98								
	30	2.11 p. m.	4.45 p. m.	0.86	2.43 p. m.	3.04 p. m.	0.02	0.19	0.57	0.60	0.67	0.70									
Rapid City, S. Dak.	23			0.75														0.45			
Red Bluff, Cal.	‡																				
Reno, Nev.	27, 30			T.														T.			
Richmond, Va.	5	1.03 p. m.	4.10 p. m.	0.78	1.08 p. m.	1.33 p. m.	0.01	0.20	0.34	0.50	0.60	0.65									
	6	2.06 p. m.	4.12 p. m.	1.26	1.42 p. m.	3.44 p. m.	0.05	0.06	0.17	0.43	0.52	0.52	0.52	0.53	0.68	0.77	0.83	1.09			
	26	5.36 p. m.	7.04 p. m.	1.09	5.47 p. m.	6.12 p. m.	0.01	0.30	0.74	0.95	0.98	1.04									
	28	2.34 p. m.	3.04 p. m.	0.47	2.36 p. m.	2.45 p. m.	0.01	0.32	0.45												
Rochester, N. Y.	27	12.40 p. m.	2.40 p. m.	2.30	12.58 p. m.	2.38 p. m.	0.05	0.05	0.12	0.20	0.24	0.28	0.29	0.30	0.33	0.43	0.60	0.89	1.65	2.21	
Roseburg, Oreg.	‡																				
Roswell, N. Mex.	25			0.96														0.46			
Sacramento, Cal.	‡																				
St. Joseph, Mo.	3	1.25 a. m.	8.15 a. m.	2.24	2.03 a. m.	2.36 a. m.	0.06	0.20	0.47	0.61	0.79	0.89	0.99	1.05							
St. Louis, Mo.	7–8	10.00 p. m.	1.00 a. m.	1.02	10.13 p. m.	10.56 p. m.	0.01	0.07	0.12	0.23	0.35	0.45	0.69	0.85	0.97	1.00					
St. Paul, Minn.	6–7	10.55 p. m.	2.25 a. m.	2.60	11.59 p. m.	1.00 a. m.	0.14	0.15	0.29	0.43	0.65	0.70	0.98	1.35	1.59	1.84	2.02	2.20			
Salt Lake City, Utah.	5			0.04														0.04			
San Antonio, Tex.	29			0.30														0.24			
San Diego, Cal.	‡																				
Sandusky, Ohio.	13–14	8.20 p. m.	7.05 a. m.	2.52	12.20 a. m.	12.56 a. m.	0.42	0.11	0.22	0.47	0.64	0.75	0.94	1.03	1.05						
San Francisco, Cal.	‡																				
San Jose, Cal.	‡																				
San Luis Obispo, Cal.	‡																				
Santa Fe, N. Mex.	23			0.15														0.07			
Sault Ste. Marie, Mich.	7	1.45 p. m.	3.35 p. m.	0.51	3.21 p. m.	3.28 p. m.	0.10	0.28	0.41												
Savannah, Ga.	21	1.03 a. m.	1.45 a. m.	0.58	1.06 a. m.	1.31 a. m.	0.01	0.19	0.33	0.45	0.52	0.57									
	22	11.05 p. m.	11.55 p. m.	0.64	11.11 p. m.	11.20 p. m.	0.01	0.37	0.60												
Scranton, Pa.	28–29			2.90														†			
Seattle, Wash.	19			0.09														0.06			
Sheridan, Wyo.	23	4.25 p. m.	7.15 p. m.	0.52	4.37 p. m.	4.51 p. m.	0.01	0.30	0.41	0.46											
Shreveport, La.	14	7.50 p. m.	9.40 p. m.	1.84	7.50 p. m.	9.30 p. m.	0.00	0.28	0.40	0.42	0.42	0.44	0.56	0.84	0.98	1.02	1.05	1.28	1.45	1.81	
	25	4.00 p. m.	6.35 p. m.	1.45	4.31 p. m.	5.02 p. m.	0.02	0.17	0.54	0.81	1.00	1.19	1.38	1.40							
	28–29	8.55 p. m.	11.40 a. m.	5.07	9.43 p. m.	10.03 p. m.	0.07	0.12	0.52	0.83	0.95										
					1.40 a. m.	3.07 a. m.	1.90	0.12	0.23	0.32	0.41	0.45	0.49	0.52	0.58	0.69	0.75	0.91	1.21	1.35	
Sioux City, Iowa.	12	2.00 a. m.	5.40 a. m.	0.82	2.16 a. m.	2.41 a. m.	0.06	0.18	0.23	0.33	0.35	0.63									
Southeast Farallon, Cal.	14			T.														T.			
Spokane, Wash.	4			0.48														0.28			
Springfield, Ill.	7	4.05 a. m.	6.18 a. m.	0.92	4.10 a. m.	4.37 a. m.	0.01	0.13	0.31	0.49	0.65	0.73	0.77								
Springfield, Mo.	22–23	10.07 p. m.	4.00 p. m.	1.94	2.13 a. m.	2.43 a. m.	0.14	0.09	0.13	0.21	0.37	0.48	0.56								
Syracuse, N. Y.	28			1.33														0.59			
Tacoma, Wash.	19			0.12														0.07			
Tampa	4	6.10 a. m.	12.20 p. m.	1.08	8.41 a. m.	9.05 a. m.	0.16	0.16	0.29	0.49	0.61	0.68									
	7	11.10 a. m.	2.40 p. m.	1.19	11.52 a. m.	12.13 p. m.	0.46	0.31	0.46	0.62	0.72										
	8	3.19 p. m.	6.35 p. m.	0.77	3.27 p. m.	3.36 p. m.	0.07	0.30	0.57												
Tatoosh, Island, Wash.	19			0.17														0.06			
Taylor, Tex.	25	2.30 p. m.	8.30 p. m.	2.13	2.46 p. m.	3.21 p. m.	0.01	0.11	0.42	0.89	1.29	1.51	1.66	1.71							
Thomasville, Ga.	28	8.44 p. m.	D.N. p.m.	1.17	9.23 p. m.	9.41 p. m.	0.46	0.14	0.33	0.42	0.48										
	29	3.34 p. m.	6.40 p. m.	0.98	4.04 p. m.	4.33 p. m.	0.02	0.09	0.12	0.16	0.32	0.49	0.55								
Toledo, Ohio.	13–14	7.10 p. m.	6.00 a. m.	1.84	12.29 a. m.	12.39 a. m.	0.37	0.27	0.48												
Tonopah, Nev.	‡																				
Topeka, Kans.	3	1.03 a. m.	7.15 a. m.	1.19	2.08 a. m.	2.33 a. m.	0.09	0.18	0.32	0.42	0.47	0.57									
	20–21	11.23 p. m.	6.15 a. m.	2.26	11.44 p. m.	12.50 a. m.	0.12	0.19	0.34	0.51	0.76	0.88	0.96	1.04	1.12	1.17	1.20	1.40	1.61		
Valentine, Nebr.	17	3.32 p. m.	4.16 p. m.	0.56	3.57 p. m.	4.08 p. m.	0.00	0.30	0.51	0.53	0.64	0.56									
Vicksburg, Miss.	14			0.77														0.39			
Walla Walla, Wash	4			0.02														0.02			
Washington, D.C.	25	4.26 p. m.	6.55 p. m.	0.65	6.20 p. m.	6.30 p. m.	0.06	0.41	0.58												
	29	1.28 p. m.	3.40 p. m.	1.14	2.53 p. m.	3.18 p. m.	0.33	0.24	0.39	0.49	0.71	0.77	0.77								
Wichita, Kans.	1	3.00 a. m.	8.55 a. m.	0.97	5.05 a. m.	5.25 a. m.	0.06	0.21	0.45	0.58	0.66										
	3	12.15 a. m.	3.30 a. m.	2.87	12.50 a. m.	2.17 a. m.	0.10	0.08	0.19	0.42	0.50	0.55	0.66	0.78	0.86	1.05	1.31	1.94	2.46	2.59	
Williston, N.Dak.	25	6.34 p. m.	8.10 p. m.	0.48	6.38 p. m.	6.48 p. m.	0.01	0.24	0.35	0.37											
Wilmington, N.C.	4	11.26 a. m.	5.20 p. m.	4.51	11.29 a. m.	12.19 p. m.	0.01	0.19	0.42	0.64	0.88	1.15	1.30	1.30	1.42	1.65	1.70				
					12.19 p. m.	12.31 p. m.		1.79	1.93												
					1.08 p. m.	1.58 p. m.	2.09	0.20	0.33	0.59	0.91	1.10	1.26	1.42	1.63	1.79	1.92				
					1.58 p. m.	2.13 p. m.		1.97	2.06	2.10											
	14–15	3.20 p. m.	D. N. a. m.	0.97	3.22 p. m.	3.55 p. m.	0.02	0.07	0.18	0.29	0.46	0.56	0.70	0.77							
	20	8.15 a. m.	4.10 p. m.	3.28	9.52 a. m.	11.12 a. m.	0.82	0.18	0.39	0.61	0.84	0.94	1.02	1.06	1.09	1.14	1.25				
								1.32	1.42	1.58	1.71	1.79	1.92							
	31	4.00 p. m.	7.10 p. m.	1.00	4.17 p. m.	4.42 p. m.	0.10	0.12	0.26	0.49	0.52	0.69									
Winnemucca, Nev	5			0.01														0.01			
Wytheville, Va.	12	7.30 p. m.	10.30 p. m.	1.91	7.48 p. m.	9.08 p. m.	0.02	0.09	0.37	0.67	1.02	1.15	1.26	1.32	1.37	1.39	1.42	1.54	1.72		
	31	7.39 a. m.	9.15 a. m.	1.16	7.47 a. m.	8.17 a. m.	T.	0.15	0.37	0.60	0.81	0.93	0.98								
Yankton, S. Dak.	6	6.25 p. m.	7.20 p. m.	0.60	6.36 p. m.	6.56 p. m.	0.01	0.26	0.33	0.49	0.56										
	26	5.30 p. m.	6.20 p. m.	0.93	5.42 p. m.	6.12 p. m.	0.01	0.06	0.21	0.39	0.80	0.87	0.92								
Yellowstone Park, Wyo.	4			0.51														0.42			
Yuma, Ariz.	13			0.01														0.01			

* Self-register not working. † Record incomplete. ‡ No precipitation occurred during month.

TABLE III.—*Data furnished by the Canadian Meteorological Service, August, 1911.*

Districts and stations.	Pressure.			Temperature.						Precipitation.		
	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Mean maximum.	Mean minimum.	Highest.	Lowest.	Total.	Departure from normal.	Total snowfall.
	Ins.	*Ins.*	*Ins.*	° F.	° F.	° F.	° F.	° F.	° F.	*Ins.*	*Ins.*	*Ins.*
St. Johns, N. F.	29.78	29.91	−.05	62.6	+2.8	70.6	54.7	80	45	0.62	−3.46	.....
Sydney, C. B. I.	29.96	30.00	+.05	64.4	+1.1	74.0	54.9	86	40	1.68	−1.94	.....
Halifax, N. S.	29.96	30.00	+.04	65.1	+1.5	73.9	56.2	82	48	3.33	−1.02	.....
Grand Manan, N. B.	29.93	29.98	+.03	63.5	+2.0	71.4	55.6	80	50	2.81	−0.85	.....
Yarmouth, N. S.	29.96	30.03	+.06	62.5	+2.3	69.7	55.2	80	48	2.64	−1.37	.....
Charlottetown, P. E. I.	29.93	29.97	+.03	67.1	+2.8	75.7	58.4	90	44	3.25	−0.49	.....
Chatham, N. B.	29.95	29.97	+.04	65.6	+2.4	75.9	55.4	92	44	6.32	+2.28	.....
Father Point, Que.	29.90	29.92	+.01	58.4	+2.8	66.5	50.3	81	40	1.33	−1.72	.....
Quebec, Que.	29.64	29.96	+.03	66.4	+3.3	76.1	56.8	88	44	2.34	−1.49	.....
Montreal, Que.	29.77	29.97	+.02	69.7	+3.3	77.7	61.7	90	47	3.73	+0.16	.....
Stonecliffe, Ont.	29.37	29.97	+.01	65.3	+2.1	78.2	52.4	91	38	2.79	−0.16	.....
Ottawa, Ont.	29.73	30.05	+.09	68.8	+4.0	79.1	58.6	90	43	1.30	−1.73	.....
Kingston, Ont.	29.70	30.00	+.02	69.8	+2.8	75.5	64.1	86	46	3.00	+0.62	.....
Toronto, Ont.	29.63	29.99	.00	69.2	+3.2	79.3	59.1	90	47	2.42	−0.34	.....
White River, Ont.	28.66	29.96	.00	56.8	+0.4	68.7	44.8	82	31	4.02	+0.72	.....
Port Stanley, Ont.	29.37	30.00	.00	66.8	+0.9	75.7	58.0	86	43	3.79	+1.37	.....
Southampton, Ont.	29.33	.....	.....	65.8	+2.0	75.1	56.5	92	40	1.08	−1.17	.....
Parry Sound, Ont.	29.32	30.00	+.02	67.0	+3.5	79.0	54.9	90	38	1.82	−0.90	.....
Port Arthur, Ont.	29.27	29.98	+.02	60.0	+0.5	70.7	49.3	81	35	2.96	+0.21	.....
Winnipeg, Man.	29.16	29.99	+.05	63.0	−0.4	74.3	51.6	88	40	2.33	−0.34	.....
Minnedosa, Man.	28.18	29.97	+.03	58.7	−0.7	71.2	46.2	85	32	5.42	+3.32	.....
Qu' Appelle, Sask.	27.74	29.97	+.04	57.0	−4.5	68.7	45.3	82	30	3.53	+1.89	.....
Medicine Hat, Alberta	27.69	29.94	+.02	62.0	−3.7	76.4	47.5	92	31	2.20	+0.53	.....
Swift Current, Sask.	27.46	30.01	+.08	58.7	−5.3	71.2	46.2	86	33	2.38	+0.47	.....
Calgary, Alberta	26.49	30.01	+.10	54.3	−5.1	65.6	43.0	78	33	4.36	+2.22	.....
Banff, Alberta	25.47	30.02	+.11	51.6	−4.7	64.1	39.1	76	31	3.76	+1.23	.....
Edmonton, Alberta	27.73	30.00	+.08	56.7	−2.1	69.3	44.1	82	33	4.49	+2.36	.....
Prince Albert, Sask.	28.41	29.95	+.03	57.7	−1.2	70.8	44.6	85	33	2.99	+0.84	.....
Battleford, Sask.	28.27	30.00	+.09	57.2	−5.4	69.5	44.8	85	32	2.23	−0.13	.....
Kamloops, B. C.	28.68	29.93	+.02	66.0	−2.6	79.4	52.5	89	43	1.02	−0.07	.....
Victoria, B. C.	29.94	30.03	+.02	60.2	+1.5	69.3	51.0	80	46	0.68	+0.08	.....
Barkerville, B. C.	25.73	30.03	+.13	50.2	−6.1	60.3	40.0	67	32	2.84	−0.26	.....
Dawson, Yukon.	28.94	.....	.....	53.3	.....	67.7	39.0	81	31	1.39	.....	.....
Hamilton, Bermuda	29.97	30.13	+.03	78.4	−1.2	84.0	72.7	87	66	7.24	+1.16	.....

Climatological Districts of the United States.



106 Climatological Sections in the United States.

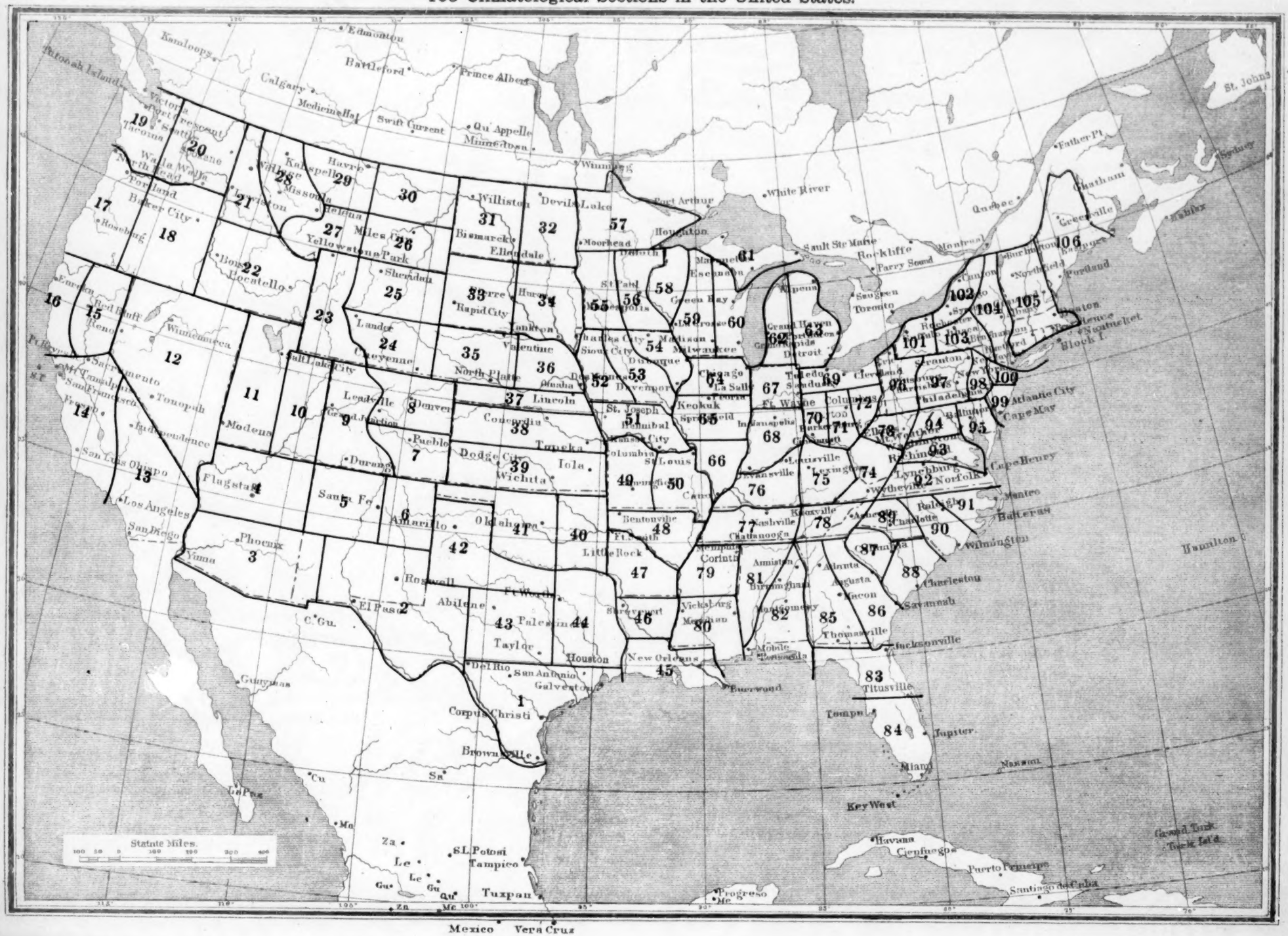

Barkerville
Edmonton
Kamloops
Battleford
Prince Albert
Calgary
Medicine Hat
Swift Current
Qu'Appelle
Minnedosa
Winnipeg
Victoria
Port Townsend
Seattle
Tacoma
Walla Walla
Portland
Baker City
Roseburg
Eureka
Red Bluff
Reno
Winnemucca
Sacramento
San Francisco
Fresno
Independence
San Luis Obispo
Los Angeles
San Diego
Yuma
Phoenix
Flagstaff
Modena
Toonopah
Salt Lake City
Ogden
Pocatello
Helena
Missoula
Kalispell
Havre
Miles City
Yellowstone Park
Sheridan
Rapid City
Huron
Aberdeen
Watertown
Valentine
Yankton
Sioux City
Omaha
Lincoln
Grand Island
North Platte
Cheyenne
Denver
Leadville
Pueblo
Durango
Dodge City
Wichita
Topeka
Concordia
Iola
St. Joseph
Kansas City
Hannibal
St. Louis
Springfield
Keokuk
Peoria
La Salle
Chicago
Davenport
Dubuque
Madison
Milwaukee
Green Bay
La Crosse
St. Paul
Minneapolis
Duluth
Moorhead
Devils Lake
Williston
Bismarck
Ellendale
Fort Arthur
White River
Sault Ste Marie
Rockliffe
Parry Sound
Montreal
Quebec
Father Pt.
St. John's
Chatham
Greenville
Halifax
Sydney
Block I.
Nantucket
Portland
Boston
Northfield
Burlington
Rutland
Albany
Utica
Rochester
Buffalo
Cleveland
Toledo
Sandusky
Detroit
Grand Haven
Grand Rapids
Kingston
Belleville
Toronto
Saugeen
Owen Sound
Collingwood
Orillia
Canton
Scranton
Philadelphia
Baltimore
Washington
Atlantic City
Cape May
Cape Henry
Norfolk
Lynchburg
Richmond
Wytheville
Knoxville
Asheville
Raleigh
Charlotte
Wilmington
Hatteras
Nantes
Hamilton
Columbia
Augusta
Charleston
Savannah
Jacksonville
Titusville
Tampa
Jupiter
Miami
Nassau
Key West
Havana
Cienfuegos
Puerto Principe
Santiago de Cuba
Grand Turk
Turks Isl'd.
Nashville
Chattanooga
Memphis
Corinth
Little Rock
Fort Smith
Bentonville
Louisville
Evansville
Indianapolis
Columbus
Parkersburg
Huntington
Lexington
Cairo
Paducah
Fort Wayne
Toledo
Cincinnati
Dayton
Springfield
Columbus
Zanesville
Wheeling
Pittsburg
Altoona
Harrisburg
Reading
Trenton
Newark
New York
Albany
Amsterdam
Syracuse
Oswego
Rochester
Buffalo
Oil City
Erie
Meadville
Franklin
Warren
Jamestown
Olean
Binghamton
Elmira
Corning
Watkins
Ithaca
Auburn
Oswego
Watertown
Ogdensburg
Malone
Plattsburg
Burlington
Northfield
Montpelier
Barre
Rutland
Bennington
Greenfield
Pittsfield
Springfield
Worcester
Boston
Nantucket
Block I.
Portland
Bangor
Eastport
Houlton
Fredericton
St. John
Chatham
Newcastle
Dalhousie
Campbellton
Bathurst
Shediac
Moncton
Amherst
Pictou
Truro
Halifax
Yarmouth
Sydney
Father Pt.
Rimouski
Quebec
Three Rivers
Montreal
Ottawa
Kingston
Belleville
Peterborough
Lindsay
Orillia
Barrie
Collingwood
Owen Sound
Saugeen
Toronto
Hamilton
Brantford
Woodstock
London
Stratford
Guelph
Galt
Berlin
Waterloo
Kitchener
Port Hope
Cobourg

Chart I. Hydrographs of Several Principal Rivers, August, 1911.

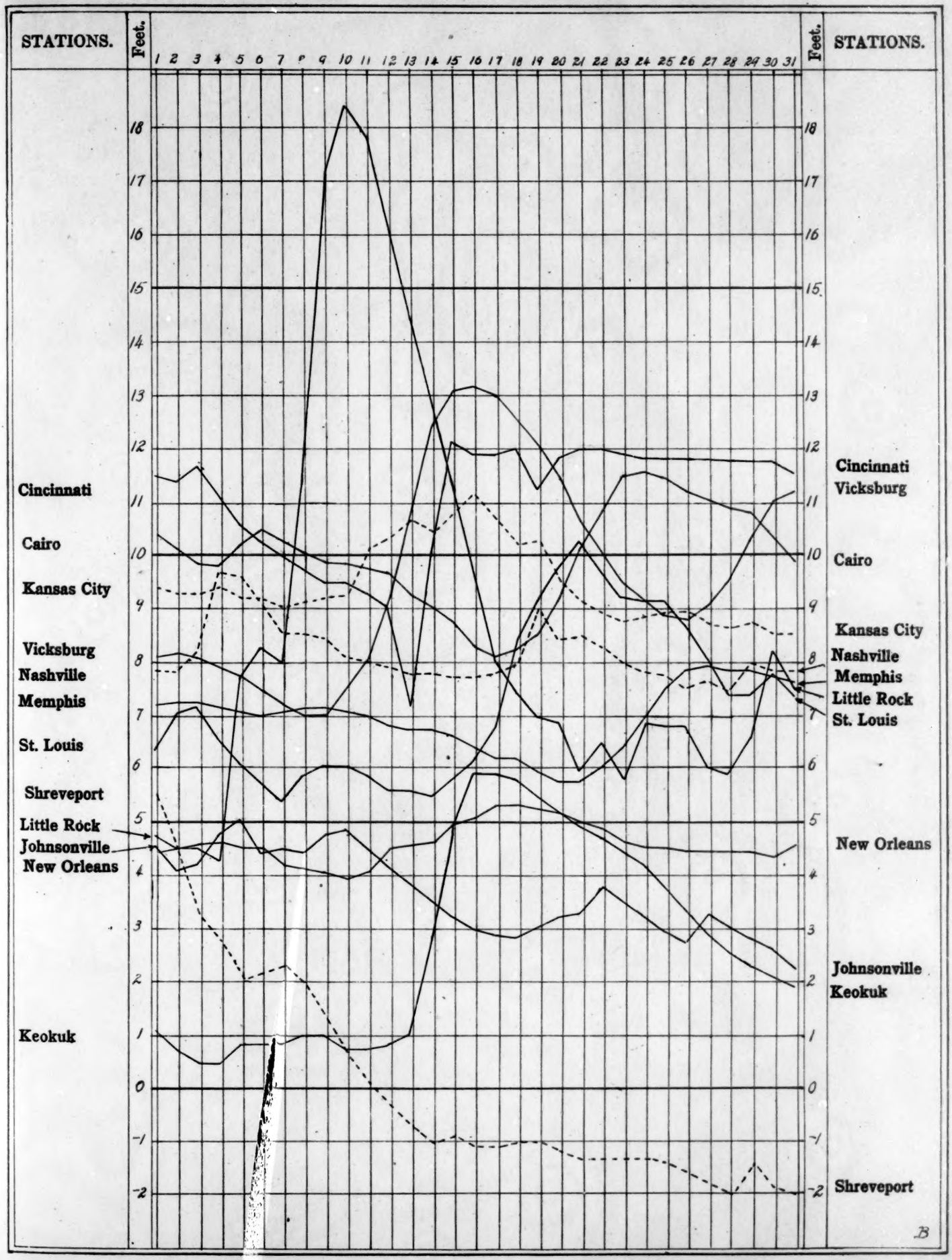


Chart II. Tracks of Centers of High Areas, August, 1911.

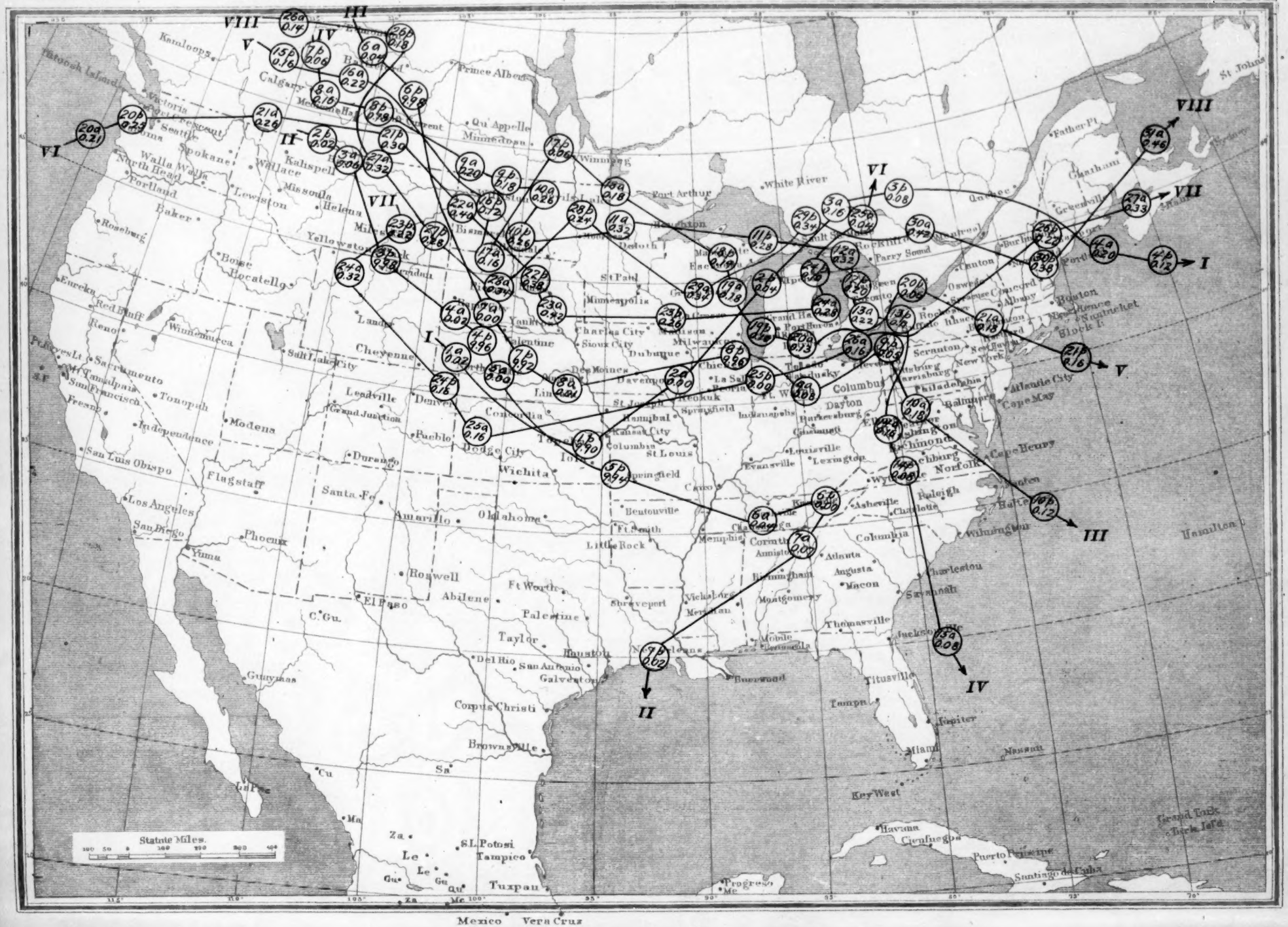


Chart III. Tracks of Centers of Low Areas, August, 1911.

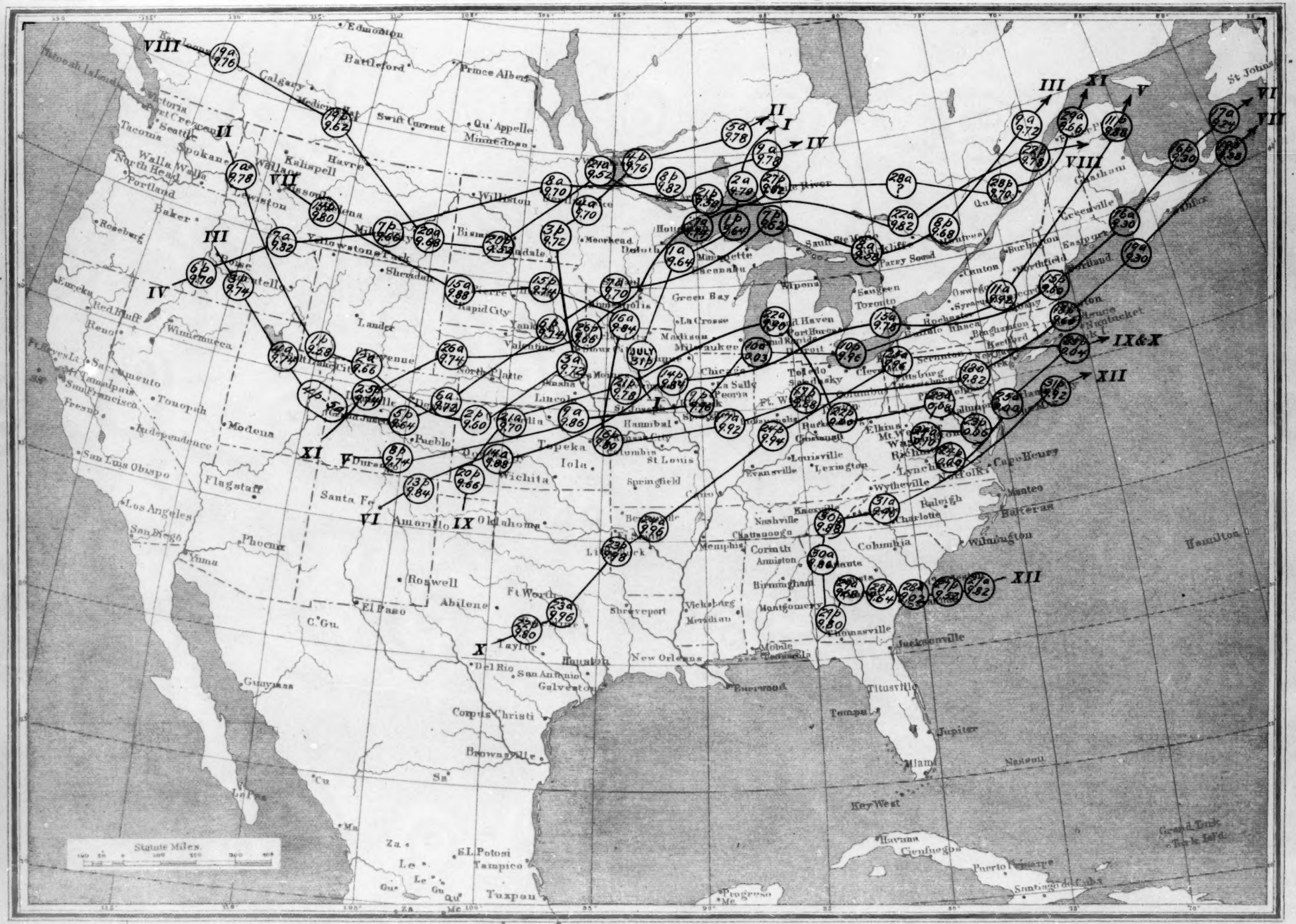


Chart IV. Departure of the Mean Temperature from the Normal, August, 1911.

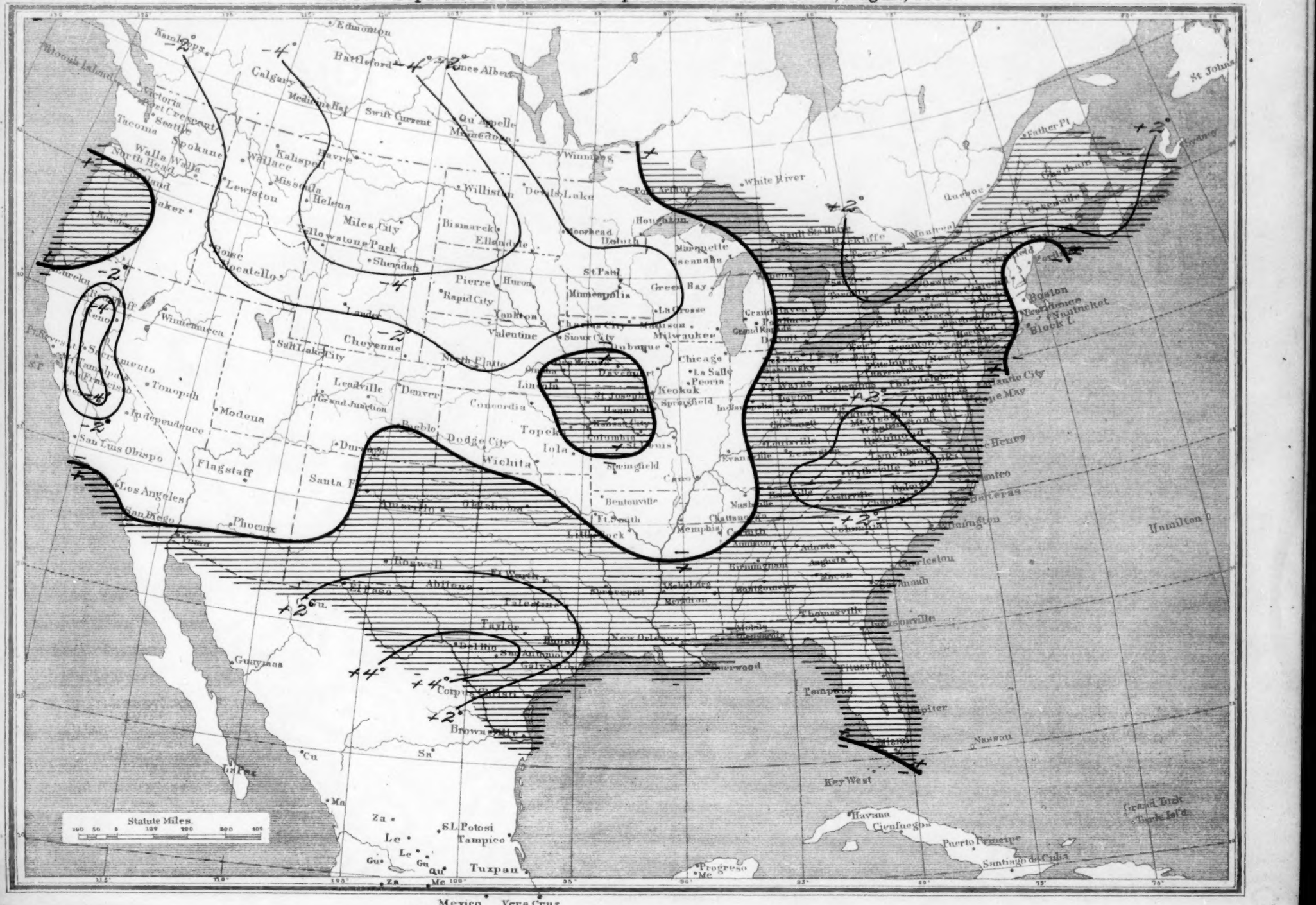


Chart V. Total Precipitation, August, 1911.

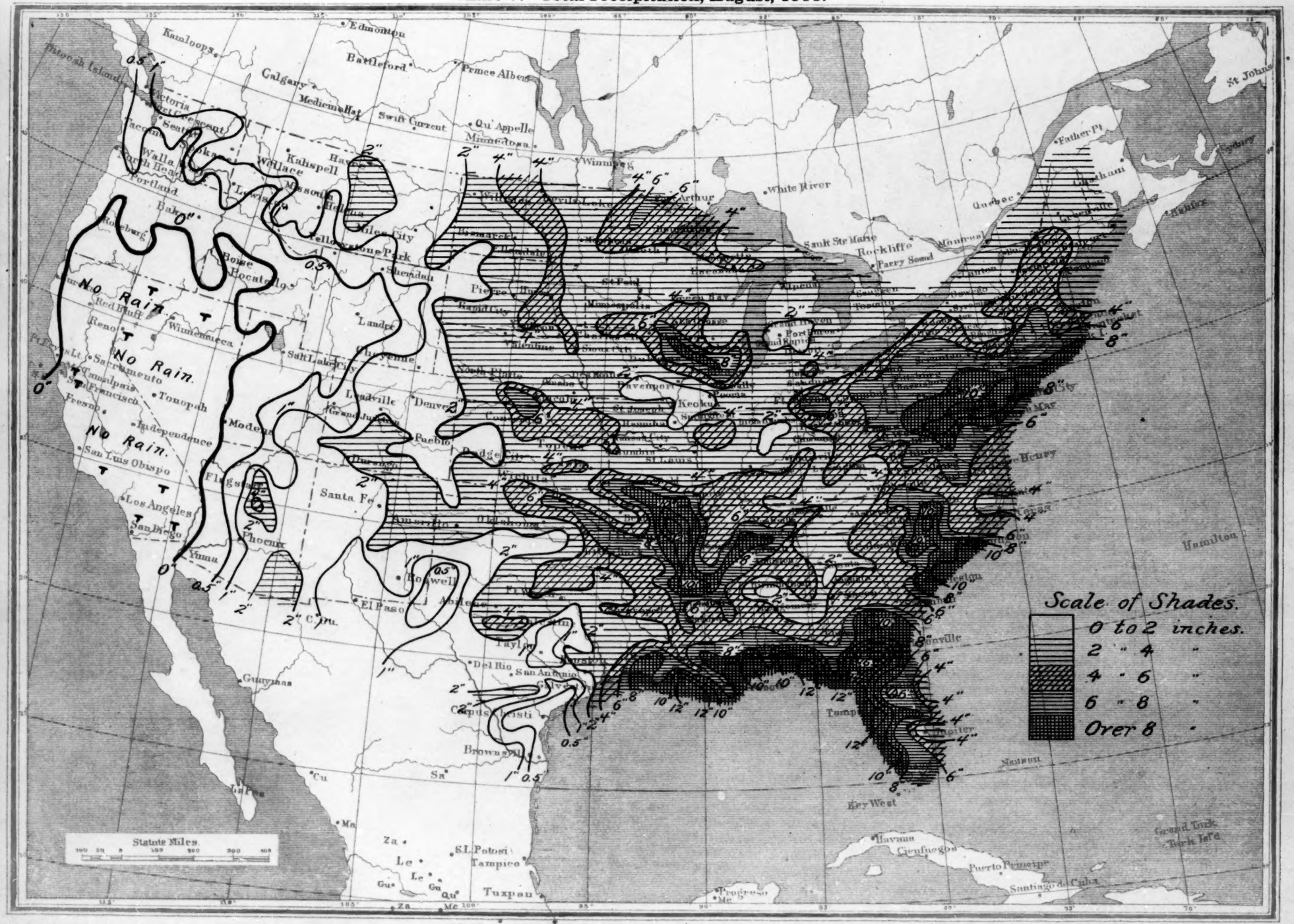


Chart VI. Percentage of Clear Sky between Sunrise and Sunset, August, 1911.

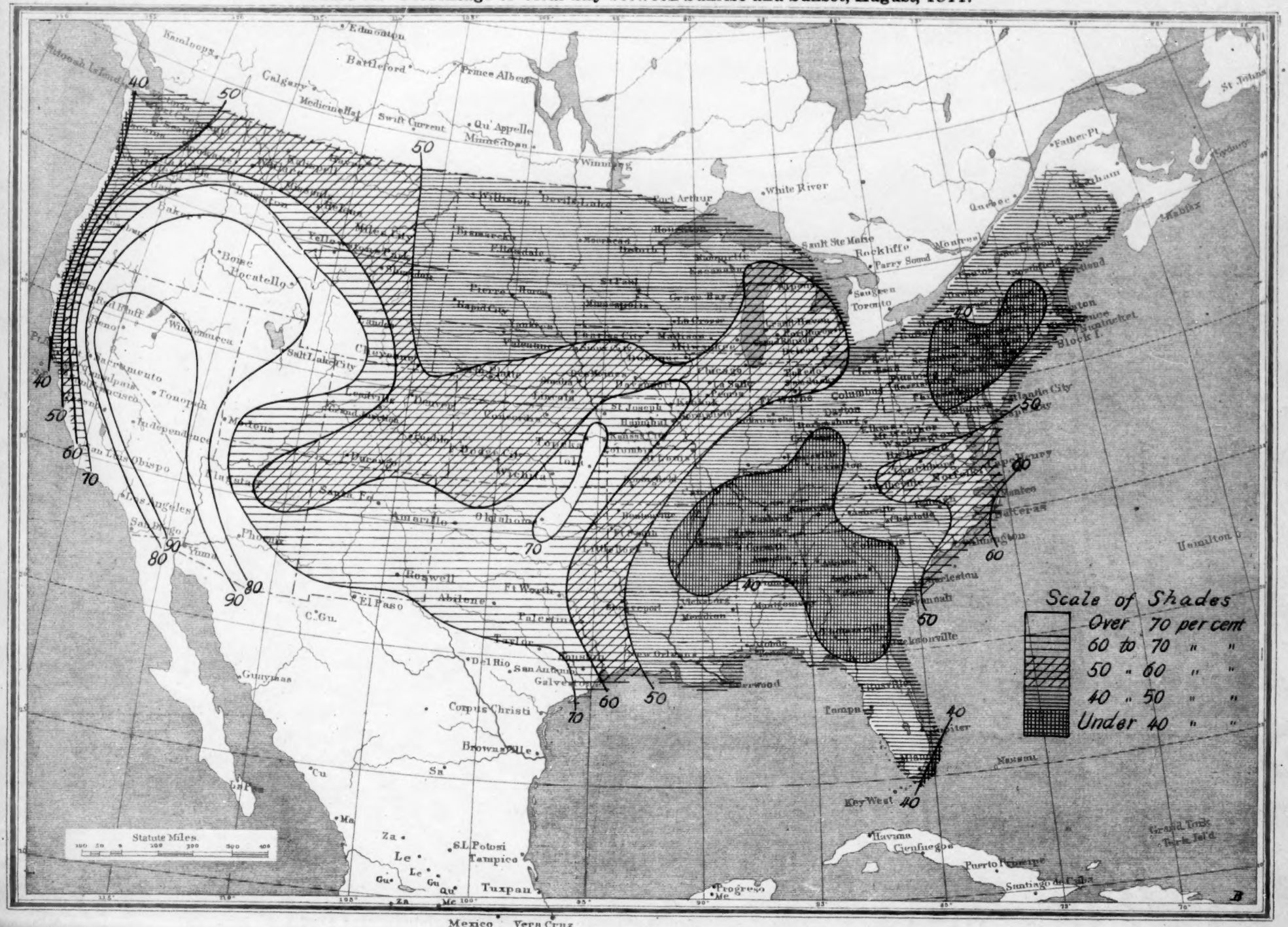
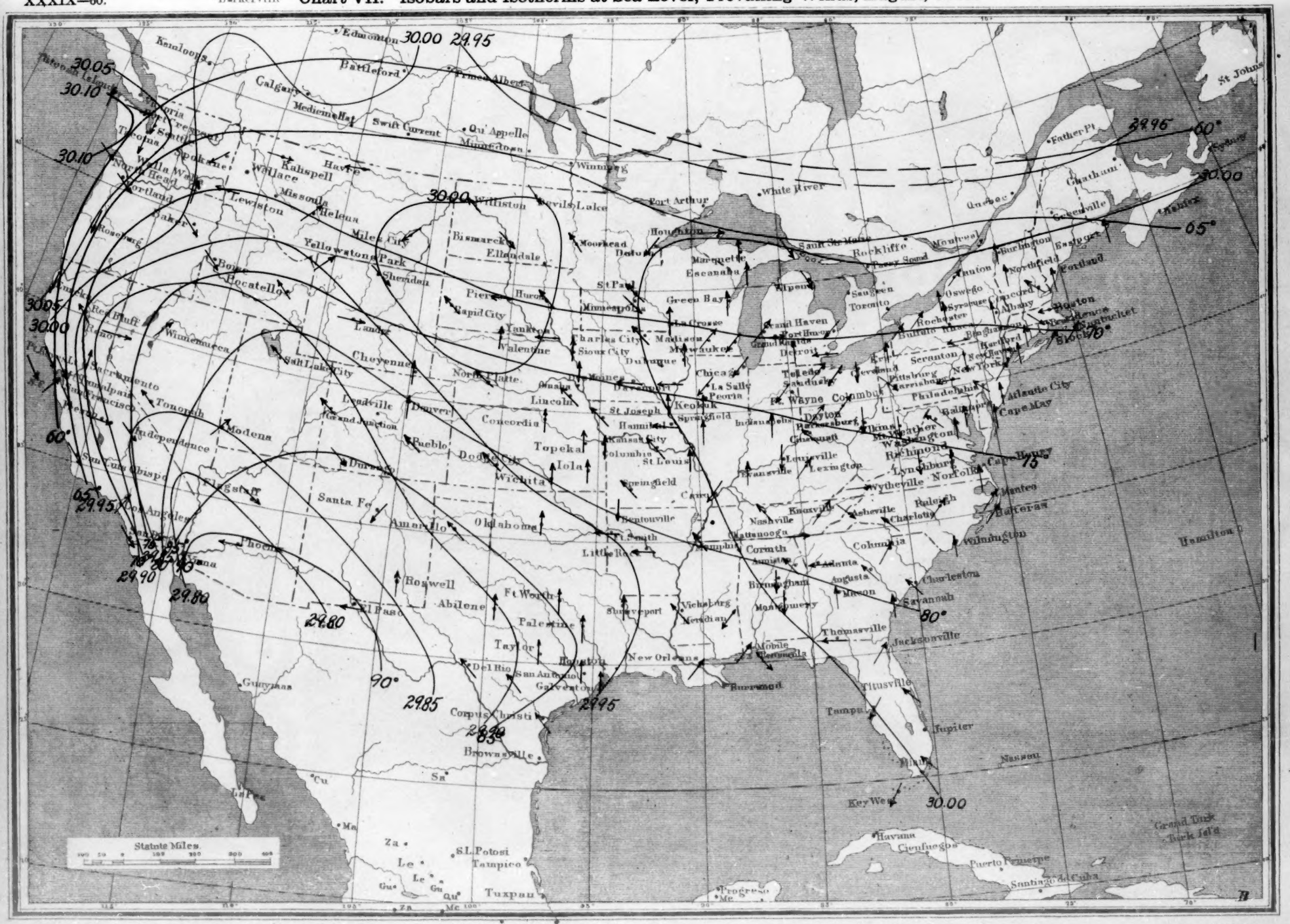



Chart VII. Isobars and Isotherms at Sea Level; Prevailing Winds, August, 1911.